INTRODUCTION

Computer services, or information systems (IS) services, for a bank's major functions can be provided within the bank or from an external source. The information in this section pertains primarily to banks receiving IS services from external service organizations and to divisions of banks not in direct control of the data center providing the services.

When a financial institution uses an external source for IS services, both the external servicer and the institution using the services bear risks and responsibilities. Some of these risks and responsibilities can be defined and delegated through legal contracts between the parties. Each party must handle other risks and responsibilities by implementing proper controls.

This section describes information-processing alternatives and the external sources for IS services, as well as the operational and technological controls needed to reasonably ensure overall data integrity. Special considerations for using external sources, guidelines for insurance coverage, record protection and contingency planning, contract execution, and the risk of termination of IS services are also discussed. Finally, guidelines for reviewing automated clearinghouse activities, retail funds-transfer systems, and small systems and microcomputers are provided.

Under 12 USC 1867(c)(2), Regulation and Examination of Bank Service Corporations, a financial institution that enters into a contract with an outside servicer for data processing services must notify its primary federal bank supervisor of this relationship within 30 days of signing a services contract or actually using the services, whichever occurs first.

This section makes extensive reference to the Federal Financial Institutions Examination Council (FFIEC) *Information System Examination Handbook*. Examiners seeking additional information should refer to that manual.

INFORMATION-PROCESSING OPTIONS

Many factors influence an institution's decision about whether to use internal or external IS services, including the initial investment, operating costs, and operational flexibility. Historically, small financial institutions, which usually lack the funds or transaction volume to justify an in-house information system, were the chief users of external data processing companies. However, as advances in technology have decreased the cost of data processing, small institutions have become much more willing to invest in an in-house information system. At the same time, some financial institutions with internal information systems have discovered that they can save money by using external data processing companies for certain banking applications. Other financial institutions have engaged national companies or facilities management organizations to assume their IS operations, while certain holding companies have organized their data processing departments as subsidiaries to centralize IS operations for their affiliate institutions.

The decision to establish an internal IS center is a major one. Any bank's board of directors and management considering such a decision should thoroughly review and consider alternatives before proceeding. While a bank may gain a number of competitive advantages from an in-house facility, there are also many risks associated with this decision. Technological advances have reduced the price of small computer networks and made them more affordable, but banks should not use this as the sole justification for an internal IS system.

A comprehensive feasibility study should precede any decision to develop an in-house system. This study should describe the costs, benefits, and risks and also give management the opportunity to compare current and future needs with existing abilities. The FFIEC's *Information System Examination Handbook* contains a complete discussion of feasibility studies.

EXTERNAL PROVIDERS OF INFORMATION SYSTEMS SERVICES

The following are the major external providers of IS services for financial institutions:

- correspondent banks
- affiliated financial organizations (such as

holding companies or holding company subsidiaries)
- independent service bureaus
- cooperative service corporations
- facilities management providers

In a financial institution, management must carefully identify the organization's needs for data processing. After these needs are properly identified (including the customers' needs for these services), management must carefully evaluate how the institution can best meet them. The costs and complexity of changing data processing arrangements can be substantial, so management must ensure that all related costs and benefits are identified and considered before deciding on a service.

Correspondent Banks

Small financial institutions sometimes receive their IS services from a major correspondent bank. These IS services may be just one of a host of services available from the correspondent, including loan participations, federal-funds purchases and sales, securities transactions, funds transfer, and stock financing.

Historically, the correspondent bank has been the least expensive servicer for many institutions. Correspondent banks may offset some of their own IS costs by using their excess processing capacity to provide services to correspondents. Consequently, they may not have correctly determined the full costs of providing these services and charged unrealistically low fees. The higher margins correspondent banks may receive on other products and services sold to the correspondents may also have compensated for lower IS fees.

Recently, correspondent banks have raised their prices for data processing services, causing smaller institutions to consider other sources for IS services. A number of third-party servicers were able to provide services at competitive prices. Many managers were also attracted by the ability of these third-party arrangements to safeguard the confidentiality of their information from correspondents (competitors).

Affiliated Financial Institution/ Banking Organizations

IS departments in holding companies or subsidiaries are the most common form of an affiliated servicer. An affiliated data center may offer cost savings to other affiliates, since all parties are generally using the same software system. The serviced institutions can eliminate the duplication of tasks, and the affiliated data center and the overall organization can realize cost savings through economies-of-scale. Thus, charges for IS services to affiliates are generally very competitive.

Regulatory guidelines strictly govern IS-servicing arrangements between affiliated institutions. Sections 23A and 23B of the Federal Reserve Act (12 USC 371c and 371c-1) address the question of allowable transactions between affiliates. These statutes also state that the terms of transactions between affiliated parties must be comparable to the terms of similar transactions between nonaffiliated parties. An affiliated data center is allowed to set fees to recover its costs or to recover its costs plus a reasonable profit, or to set charges for data processing services that are comparable to those of a nonaffiliated servicer. Other restrictions may also apply.

Independent Service Bureaus

Independent service bureaus are present in most metropolitan areas, but mergers and acquisitions have caused the number of bureaus to decline. When management investigates a service bureau's operations, it should determine if the servicer is familiar with the IS needs of financial institutions. Determining the percentage of the service bureau's business that comes from financial institutions will help the institution select a vendor that specializes in this type of processing. Independent service bureaus are normally responsive to user requests for specialized programs, since developing these programs for clients is generally a significant source of revenue. Tailoring a software program to a particular institution's needs becomes less attractive to the independent service bureau if the institution accounts for only a small portion of the bureau's workload or if the bureau offers a standardized software package as its primary product. However, some standardized software systems allow a modest amount of processing and report adjustments without requiring servicer modifications. Also, report generator software, which provides clients with customized reports they can prepare without any help from the service bureau, is sometimes available from service bureaus.

Cooperative Service Corporations

A cooperative service corporation is a data processing facility formed by a group of financial institutions that agrees to share the operating costs. Under the right circumstances, this arrangement works well. For this strategy to succeed, however, all members of the group must be the same approximate size and have similar IS requirements. Typically, each institution owns a share of the facility or bears a share of the costs on a pro rata basis through investment in a bank service corporation. There must be a strong working relationship among the institutions. Although the institutions are not directly involved in the data processing center's daily operations, they are ultimately responsible for the center's success or failure.

One advantage of a coopertive service corporation is that individual institutions have increased control over the design of the data processing operation. Therefore, institutions can tailor computerized applications to meet their own needs. Resource pooling often provides for economies-of-scale as well, and cooperative ventures normally attract more highly skilled and more experienced employees.

Conversely, cooperative associations that link together institutions of different sizes with different IS needs may not function smoothly. The larger institutions in the group may attempt to dominate and skew the data processing operations toward their own interests. In this environment, the tasks of setting priorities and controlling operating costs may prove hard to achieve. Since each institution is a partial owner of the data processing facility, it may be difficult for one institution to divest its investment if it wants to switch to another servicer.

Facilities Management Providers

Medium- and large-sized financial institutions that already have an in-house data processing facility are the most likely users of facilities management (FM) contracts. Small institutions typically do not have the work volume that is a prerequisite to hiring an FM company. Service contracts with FM companies are usually for a minimum term of five years, during which time the FM company assumes full responsibility for the institution's data processing operations. The institution pays the FM company a monthly fee to reimburse it for the costs of providing IS services plus a profit. The FM company usually carries out its tasks in the institution's former data processing center.

Financial institutions have various reasons for using FM companies, such as controlling or reducing the growth of data processing costs, ensuring better management of data center personnel, or using more modern software systems. Management of financially strained institutions may enter into FM arrangements to augment their capital position by selling their equipment or facilities to the FM company.

Although an institution's contract with an FM company may provide a quick and easy solution to data processing problems with minimal involvement of senior officials, management should be aware of potential problems. FM contracts can have clauses that require the institution to pay more for services as work volume grows and can also contain provisions for periodic increases. The contract may include a substantial penalty for cancellation. Another risk is that the FM company may make personnel changes that are not advantageous to the institution, such as reassigning its best workers elsewhere or reducing the size of the data processing staff. Bank management should make sure that FM service contracts contain specific quality measurement clauses and should monitor the quality of data processing services provided.

OTHER PURCHASED SERVICES

Computer Time

A financial institution that designed its own data processing system and that maintains its own files only needs to rent computer time from an external servicer. This arrangement usually occurs when the financial institution's equipment or schedule makes it unable to handle some unusual processing task.

Time-Shared Computer Services

Most external providers of time-sharing services have a library of standardized programs available to any user. A user also may generate programs and store them in a reserved library. Financial institutions frequently use time-sharing

services for financial analysis rather than recordkeeping. Applications with low input and output requirements and repetitive calculations, such as those required for a securities portfolio, lend themselves to a time-sharing arrangement. The external servicer in this arrangement normally does not maintain the client institution's data files. Financial institutions that store master files on the external servicer's equipment should maintain adequate documentation to facilitate the examination process. Under this arrangement, management should be concerned about ensuring logical and physical access to the terminal and with the availability of audit trails that indicate who has made changes to master files. Management should establish and monitor controls over passwords, terminals, and access to master files. For a complete discussion of controls over passwords and terminals, see the FFIEC's *Information System Examination Handbook*.

Satellite (Remote) Processing

Satellite processing has become popular with some financial institutions that are located far away from an external servicer and that must process a large volume of transactions. A distinguishing characteristic of satellite processing is that the institution and the data center each perform a portion of the processing. Although the institution collects the data and sometimes prepares reports, the servicer makes the necessary master file updates. To capture data and print reports, the serviced institution must acquire a terminal entry device, a printer, an MICR reader/sorter, and a tape or disk unit. Since the system is usually on-line, the serviced institution must install modems and communications lines linking it to the servicer. The level of skill necessary to perform remote job entry in a satellite system is less sophisticated than the level needed to operate an in-house system. Most of the traditional control functions remain at the institution. The FFIEC's *Information System Examination Handbook* contains further information on satellite processing, remote job entry, and distributive processing systems.

Standard Program Packages

Most bank data centers and service bureaus specialize in processing one or more standard software packages. By using the same software for several users, external servicers achieve certain operating economies, which allow them to recover initial development costs more quickly. Most standard software packages are parameter-driven, providing the user with some degree of flexibility. For example, in demand deposit and savings applications, standard program modules or common subroutines often allow the user to designate the format and frequency of reports. In addition, the user may select the parameters necessary to generate certain reports, such the as number of inactive days before an account becomes dormant or the minimum dollar amount for checks listed on the large-item report. The user can also be involved in selecting the criteria for interest rates, balance requirements, and other operating values, allowing for a tailored application within a standardized software system.

Tailored Applications

If standard program packages do not meet a financial institution's needs, an external servicer can be hired to design tailored applications to process the institution's data. The institution must clearly describe the proposed system and its operations to the servicer. Internal or external auditor participation in reviewing controls is also advisable. The initial cost of this approach is high, as are the costs of maintaining and updating the tailored applications.

OPERATIONAL AND TECHNOLOGICAL USER CONTROLS

Using computerized programs and networks, banks maintain a large number of accounts and record a high volume of transactions every day. Text-processing systems store vast amounts of correspondence. Transmission of data and funds regularly occurs over public communications links, such as telephone lines and satellite networks. The use of new technologies to transfer funds and records, while improving customer service and the institution's internal operations, has increased the potential for errors and abuse, which can result in loss of funds, lawsuits arising from damaged reputations, improper disclosure of information, and regulatory sanctions.

Controls must be implemented to minimize the vulnerability of all information and to keep funds secure. Bank management must assess the level of control necessary in view of the degree of exposure and the impact of unexpected losses on the institution. There are certain practices that can strengthen information and financial security. The most basic is the implementation of sound policies, practices, and procedures for physical security, separation of duties, internal quality control, hardware and software access controls, and audits.

Bank management should institute information security controls that are designed to—

- ensure the integrity and accuracy of management information systems;
- prevent unauthorized alteration during data creation, transfer, and storage;
- maintain confidentiality;
- restrict physical access;
- authenticate user access;
- verify accuracy of processing during input and output;
- maintain back-up and recovery capability; and
- provide environmental protection against damage or destruction of information.

Although security features vary, they are usually available for all computer systems. The controls adopted should apply to information produced and stored by both automated and manual methods.

Written policies are generally recommended and, in most cases, institutions have chosen to establish and communicate security principles in writing. However, if an institution follows sound fundamental principles to control the risks discussed here, a written policy is not necessarily required. If sound principles are not effectively practiced, management may be required to establish written policies to formally communicate risk parameters and controls. Federal Reserve System policy does, however, require written contingency and disaster recovery plans.

Examiners may periodically conduct reviews of information security. These reviews may include an assessment of—

- the adequacy of security practices,
- compliance with security standards, and
- management supervision of information security activities.

When conducting reviews of controls over information security, examiners must understand the difference between master files and transaction files. A master file is a main reference file of information used in a computer system, such as all mortgage loans. It provides information to be used by the program and can be updated and maintained to reflect the results of the processed operation. A transaction file or detail file contains specific transaction information, such as mortgage loan payments.

Manual Controls

The following discussion covers basic operational controls in a financial institution receiving external IS services. Similar controls should also be applied to information processed by an IS department within a user's own institution.

Separation of Duties

A basic form of operational control is separation of duties. With this control in place, no one person should be able to both authorize and execute a transaction, thereby minimizing the risk of undetected improper activities. Data center personnel should not initiate transactions or correct data except when it is necessary to do so in order to complete processing in a reasonable time period. If this unusual situation arises, proper authorization should be obtained from data center and bank management. Both the servicer and the serviced institution should maintain documentation of these approvals, including details of the circumstances requiring the action. The same person should normally not perform input and output duties. However, in some instances, staff limitations may make one person responsible for several activities, such as—

- preparing batches and blocks or other input for entry to the system or shipment to the servicer;
- operating data entry equipment, including check reader/sorter machines, proof machines, or data conversion devices;
- preparing rejects and nonreads for reentry into the system;
- reconciling output to input or balancing the system;

- distributing output to ultimate users; and
- posting the general ledger and balancing computer output to the general ledger.

Rotation of assignments and periodic scheduled absences may improve internal controls by preventing one person from controlling any one job for an extended time period (and by providing cross-training and back-up for all personnel). When vacations are scheduled, management may require staff to take uninterrupted vacations that are long enough to allow pending transactions to clear. These practices are most effective if vacations or other types of absences extend over the end of an accounting period or are for two consecutive weeks. Written policies and procedures may require job rotation.

Application manuals usually consist of a user's guide provided by the servicer and supplemented by procedures written by the user. Manuals normally cover the preparation and control of source documents, certain control practices pertaining to moving documents or electronic images to and from the user and servicer, the daily reconcilement of totals to general ledger, and master file changes.

Management should implement dual control over automated systems. Personnel should place supervisory holds on customer accounts requiring special attention. For example, dormant accounts, collateral accounts, and accounts with large uncollected funds balances generally have holds that can be removed only by authorizations from two bank officials. In addition, certain types of transactions (for example, master file changes) should require authorization from two bank officials by means of special codes or terminal keys. When employees add or remove a hold on an account or when the system completes a transaction requiring supervisory approval, the computer should generate an exception report. Assigned personnel not involved in the transaction should promptly review these reports for unusual or unauthorized activity.

Internal Quality Controls

Internal controls fall into three general categories: administrative, dollar, and nondollar.

- Administrative controls usually consist of management review of daily operations and output reports. Each application includes basic controls and exception reports that are common to all operations. To be effective, operations personnel must properly use exception reports and controls. This is especially true for controlling dormant accounts, check kiting, draws against uncollected funds, overdrafts, and posting computer-generated income and expense entries.
- Dollar controls ensure processing for all authorized transactions. Operations personnel should establish work and control totals before forwarding data records to the data processor. Those same employees should not complete balancing procedures by reconciling trial balances to input, control sheets, and the general ledger. Report distribution should follow a formal procedure. Personnel should account for all rejects corrected and resubmitted.
- Nondollar controls are used when dollar values are not present in the data, as in name and address changes. Controls should be established before forwarding work for processing. Management should also implement procedures designed to ensure that its servicer processes all nondollar transactions. For example, personnel should check new account reports against new account input forms or written customer account applications to make sure that data are properly entered. To protect data integrity, management should develop procedures to control master file and program changes. These procedures should also verify that the servicer is making only authorized changes and ensure that data processing employees do not initiate master file changes.

Technological Controls

Encryption

Encryption is a process by which mathematical algorithms are used to convert plain text into encrypted strings of meaningless symbols and characters. This helps prevent unauthorized viewing and altering of electronic data during transmission or storage. The industry commonly uses the Data Encryption Standard (DES) for encoding personal identification numbers (PINs) on access cards, storing user passwords, and transfers of funds on large-dollar payment networks.

Message Authentication Code

A message authentication code (MAC) is a code designed to protect against unauthorized alteration of electronic data during transmission or storage. This code is used with data encryption to further secure transmission of large-dollar payments.

User Passwords

User passwords consist of a unique string of characters that a programmer, computer operator, or user must supply before gaining access to the system or data. These are individual access codes that should be specific to the user and known only to the user. Other security features of passwords should, at a minimum, require the users to change them periodically and store them in encrypted files. In addition, the passwords should be composed of a sufficient number of alphanumeric characters to make them difficult to guess. User passwords should not be displayed during the access process and should not be printed on reports.

Security Software

Security software is software designed to restrict access to computer-based data, files, programs, utilities, and system commands. Some systems can control access by user, transaction, and terminal. The software can generate reports that log actual and attempted security violations as well as access to the system.

Data Retention

Processing personnel should regularly copy and store critical institution records in an off-site location that is still sufficiently accessible to obtain records in a reasonable time period. These records should include data files, programs, operating systems, and related documentation. This also applies to critical data in hard-copy documents. In addition, an inventory of the stored information should be maintained along with a defined retention period.

Restricted Terminals

Limiting certain types of transactions to certain terminals or groups of terminals can help reduce exposure to loss. The offsetting problem is that loss of these terminals can stop processing for an entire application. Bank management should therefore evaluate both the exposure and processing risks. An automatic time-out feature can minimize the curtailment of processing. Since unauthorized users may target an unattended terminal, this feature automatically signs off the user when there has been no activity for a certain period of time. There may be little user inconvenience in this feature if, to restart, the user need only re-enter a password. Using time-of-day restrictions can also limit unauthorized use of terminals during periods when an entire department or section would be unattended.

Restricted Transactions

Restricted transactions are specialized transactions that can be performed only by supervisory or management personnel. Examples include reversing transactions, dollar adjustments to customer accounts, and daily balancing transactions. Management should periodically review user needs and the appropriateness of restricting the performance of these transactions. System-generated reports can be used to review this activity more frequently.

Activity and Exception Reports

Report output will vary, depending on the sophistication of the data communications and applications software. Management should receive activity reports that detail transactions by terminal, operator, and type. More sophisticated software will produce activity and exception reports on other criteria, such as the number of inquiries by terminal, unsuccessful attempts to access the system, unauthorized use of restricted information, and any unusual activities (that is, infrequently used transactions).

Activity reports are used to monitor system use and may not be printed daily. However, management should periodically review and summarize these reports in an effort to ensure that machines are used efficiently. Exception reports should be produced and reviewed daily by designated personnel who have no conflict-

ing responsibilities. A problem with many reporting systems is that the log contains a record of every event, making it cumbersome and more difficult to identify problems.

Controls over Program Change Requests

Requests for program changes should be documented on a standard change request form. The form is used to describe the request and document the review and approval process. It should contain the following information:

- date of the change request
- control sequence number
- program or system identification
- reason for the change
- description of the requested change
- person requesting the change
- benefits contemplated from the change
- projected cost
- signed approval authorizing the change including, at a minimum, the user, IS personnel with the proper authority, and an auditor (at least for significant changes)
- name of programmer assigned to make the change
- anticipated completion date
- user and information systems approval of the completed program change
- implementation procedures (steps for getting the program into the production library)
- audit review of change (if deemed necessary)
- documented sign-off

Controls over Report-Writing Capabilities

As a data processing system becomes more sophisticated, controls will also become more complex. Generally, there are three basic types of information systems, with an infinite number of combinations and variations:

- *Inquiry-only system.* This system allows the user to search and review machine-readable records, but not to alter them. Controls and security concerns related to this system are few, the major concern being unauthorized access to confidential information.

- *Memo-post system.* This is more sophisticated than the inquiry-only system and allows the user to create interim records. The servicer performs permanent posting routines using batch-processing systems. Controls for a memo-post system include limiting physical and logical access to the system and restricting certain transactions to supervisory personnel only. Appropriate levels of management should review memo-post reports daily.

- *On-line post system.* This system, sometimes called a real-time system, requires the strictest controls. On-line post systems are vulnerable because all accepted transactions are transferred to machine-readable records. In addition to access controls, system reports should record all activity and exceptions. Appropriate levels of management should review these reports daily.

CONTINGENCY PLANNING

Data communications systems are susceptible to software, hardware, and transmission problems that may make them unusable for extended periods of time. If a financial institution depends on data communication for its daily operations, appropriate back-up provisions are necessary. Back-up is the ability to continue processing applications in the event the communications system fails. Management can provide back-up by various methods, including batch-processing systems, intelligent terminals or PCs operating in an off-line mode, data capture at the controller if transmission lines are lost, redundant data communication lines, and back-up modems.

Regardless of the method used, FFIEC interagency issuances and specific supporting Federal Reserve System policy issuances that address corporate contingency planning require a comprehensive back-up plan with detailed procedures. When using a batch back-up system, operations personnel must convert data to a machine-readable format and transport the data to the servicer. This process may require additional personnel (data entry operators and messengers) and equipment. An institution's contingency plan should include detailed procedures on how to obtain and use the personnel and equipment. Because on-line systems are updated or improved frequently, a batch back-up may not remain compatible. Institution personnel should perform periodic tests of batch and other back-up capabilities to ensure that protection is available and that employees are familiar with the plan.

AUDITS

Examiners need to determine the appropriateness of the scope and frequency of audit activities related to information systems and the reliability of internal or third-party audits of servicer-processed work. Furthermore, examiners should review the methods by which the board of directors is apprised of audit findings, recommendations, and corrective actions taken. In reviewing audit activities, examiners should consider the following factors (if applicable):

- the practicality of the financial institution's having an internal IS auditor and, if the institution has an internal IS auditor, the auditor's level of training and experience
- the training and experience of the institution's external auditors
- the audit functions performed by the institution's outside auditors, by the servicer, by the servicer's outside auditor, and by supervisory personnel
- internal IS audit techniques currently being followed

The audit function should review controls and operating procedures that help protect the institution from losses caused by irregularities and willful manipulations of the data processing system. Thus, a regular, comprehensive audit of IS activities is necessary.

Additionally, designated personnel at each serviced institution should periodically perform "around-the-computer" audit examinations, such as—

- developing data controls (proof totals, batch totals, document counts, number of accounts, and prenumbered documents) at the institution before submitting data to the servicer and sampling the controls periodically to ensure their accuracy;
- spot-checking reconcilement procedures to ensure that output totals agree with input totals, less any rejects;
- sampling rejected, unpostable, holdover, and suspense items to determine why they cannot be processed and how they were disposed of (to make sure they were properly corrected and reentered on a timely basis);
- verifying selected master file information (such as service-charge codes), reviewing exception reports, and cross-checking loan extensions to source documents;
- spot-checking computer calculations, such as the dollar amounts of loan rebates, interest on deposits, late charges, service charges, and past-due loans, to ensure proper calculations;
- tracing transactions to final disposition to ensure audit trails are adequate;
- reviewing source documents to ascertain whether sensitive master file change requests were given the required supervisory approval;
- assessing the current status of controls by either visiting the servicer or reviewing independent third-party reviews of the servicer;
- reviewing processing procedures and controls; and
- evaluating other audits of the servicer.

In addition, "through-the-computer" audit techniques allow the auditor to use the computer to check data processing steps. Audit software programs are available to test extensions and footings and to prepare verification statements.

Regardless of whether an institution processes data internally or externally, the board of directors must provide an adequate audit program for all automated records. If the institution has no internal IS audit expertise, the nontechnical "around-the-computer" methods will provide minimum coverage, but not necessarily adequate coverage. A comprehensive external IS audit, similar to those discussed in the FFIEC's *Information System Examination Handbook*, should be carried out to supplement nontechnical methods.

INSURANCE FOR USERS AND SERVICERS

A financial institution should periodically review its insurance coverage to ensure that the amount of coverage is adequate to cover any exposure that may arise from using an external IS provider. To determine what coverage is needed, the institution should review its internal operations, the transmission or transportation of records or data, and the type of processing performed by the servicer. This review should identify risks to data, namely the accountability for data, at both the user and servicer locations and while in transit. Insurance covering physical disasters, such as fires, floods, and explosions, should be sufficient to cover replacement of the data processing system. Coverage that protects specialized computer and communications

equipment may be more desirable than the coverage provided by regular hazard insurance. Expanded coverage protects against water infiltration, mechanical breakdown, electrical disturbances, changes in temperature, and corrosion. The use of an ''agreed-amount'' endorsement can provide for full recovery of covered loss.

Bank management should also review the servicer's insurance coverage to determine if the amounts and types are adequate. Servicer coverage should be similar to what the financial institution would normally purchase if it were performing its own data processing internally. Servicer-provided coverage should complement and supplement the bank's coverage.

If a loss is claimed under the user's coverage, the user need only prove that a loss occurred to make a claim. However, if the loss is claimed under the servicer's coverage, the institution must prove that a loss occurred and also that the servicer was responsible for the loss.

Examiners should review the serviced institution's blanket bond coverage, as well as similar coverage provided by the servicer. In the past, form 24 provided broad fidelity coverage and was relatively inexpensive. As a result of the large quantity of losses sustained, the insurance industry has extensively modified its fidelity coverage to restrict, limit, or eliminate coverage that had previously been in effect. As new policies replaced existing policies, the ''standard'' coverage of form 24 changed. The coverage period is now stated in terms of a fixed time period. The loss, the discovery, and the reporting of the loss to the insurer must occur during that stated period. Extended discovery periods are generally available at additional cost if an institution does not renew its bond. The dollar amount of the coverage now represents an aggregate for the stated period. Each claim paid, including the loss, court costs, and legal fees, reduces the outstanding amount of coverage, and recoveries do not reinstate previous levels of coverage. Since coverage extends only to locations stated in the policy, the policy must individually list all offices. Additionally, policies no longer cover certain types of documents in transit.

The bank's board of directors should be involved in determining insurance coverage since each board member will be acknowledging the terms, conditions, fees, riders, and exclusions of the policy. Insurance companies consider any provided information as a warranty of coverage. Any omission of substantive information could result in voided coverage.

The bank or servicer should consider buying additional coverage. Media reconstruction policies defray costs associated with recovering data contained on the magnetic media. Media replacement policies replace blank media. Extra expense policies reimburse organizations for expenses incurred over and above the normal cost of operations. In addition, servicers often purchase policies covering unforeseen business interruptions and the liabilities associated with errors and omissions. Both servicer and banking organizations may purchase transit insurance that covers the physical shipment of source documents. Additionally, electronic funds transfer system (EFTS) liability coverage is available for those operations that use electronic transmission.

Several factors may influence an institution's decision to purchase insurance coverage or to self-insure: the cost of coverage versus the probability of occurrence of a loss, the cost of coverage versus the size of the loss of each occurrence, and the cost of coverage versus the cost of correcting a situation that could result in a loss. Some institutions engage risk consultants to evaluate these risks and the costs of insuring against them. Outside experts may be best suited to evaluate the proper types and amounts of insurance protection needed in situations with complex risks or in which management's expertise is limited. Management should employ certain criteria when using a consultant for these reviews. The consultant should not be affiliated with an insurance company or be underwriting or selling insurance. Additionally, the consultant should have a good reputation within the marketplace.

RECORD PROTECTION AND RETENTION

Institutions should create computerized back-up copies of the institution's critical records and have alternative methods of processing those records. When IS operations are performed outside the institution, both the servicer and the financial institution should have adequate control over the records. Bank management should determine which records are best protected by the servicer and which are best protected internally. Service contracts should outline the ser-

vicer's responsibility for storing bank records. If the servicer does not or will not permit specific reference to record retention in the contract, a general reference may be sufficient. The institution should obtain a copy of the servicer's back-up policy and retention procedures, and bank management should thoroughly understand which records are protected by whom and to what extent.

The bank should also review the servicer's software and hardware back-up arrangements. The review should determine how often data and software back-ups are made, the location of stored materials, and which materials are stored at that site. Management should also determine the availability of software replacement and vendor support, as well as the amount and location of duplicate software documentation. Software replacement and documentation procedures should be developed for both operating and application systems.

Management should review the servicer's hardware back-up arrangements to determine if (1) the servicer has a contract with a national recovery service and, if so, the amount and type of back-up capacity provided under the contract; (2) the servicer has an alternate data center with sufficient capacity and personnel to provide full service if necessary; or (3) multiple processing sites within the same facility are available for nondisaster processing problems and if each site has an alternate power supply. The alternate site should be able to provide continued processing of data and transmission of reports.

Contracts or contingency plans should specify the availability of source documentation in the event of a disaster, including insolvency of the servicer. FFIEC interagency issuances and Federal Reserve System policy statements require financial institutions to evaluate the adequacy of a servicer's contingency plan and to ensure that its own contingency plan is compatible with the servicer's plan.

Since the duplication of records may vary from site to site, most organizations develop schedules for automatic retention of records on a case-by-case basis. The only way to ensure sufficient record protection is to continually review the flow of documents, data, and reports. Some records may be available in both hard-copy and machine-readable formats. In addition to determining the types of back-up records, management should determine whether it is possible to re-create current data from older records. Certain records also have uses apart from their value in reconstructing current data, such as meeting institutional and regulatory reporting requirements. These records usually include month-end, quarter-end, and year-end files.

The location of an external data center is another factor to consider when evaluating retention procedures. If the external data center is located in a building adjacent to the institution, the possibility that a disaster may affect both organizations increases. Such a situation may make off-site storage of back-up materials even more important. If, on the other hand, the serviced institution is located far from the data center, physical shipment of both input and output may become necessary. Management should determine if fast, reliable transportation between the two sites is available.

If a major disaster occurs, an alternate facility may not be available to process duplicated machine-readable media. Management should consider remote record storage that would facilitate the manual processing of records, if necessary. Furthermore, microfilming all items before shipment would protect the institution should any items be lost, misplaced, or destroyed. Optical disk storage—which involves scanning and storing a document electronically—offers another attractive alternative for storage and retrieval of original data after processing has occurred.

A number of records storage firms offer remote storage at a reasonable cost and can help the bank develop a comprehensive microfilm or optical disk-based record protection program. The serviced institution, on the other hand, may wish to develop its own plan. The FFIEC's *Information System Examination Handbook* and related FFIEC and Federal Reserve System issuances are sources of information about planning for unexpected contingencies.

CONTRACTS BETWEEN USERS AND SERVICERS

A poorly written or inadequately reviewed contract can be troublesome for both the serviced financial institution and the servicer. To avoid or minimize contract problems, bank legal counsel who are familiar with the terminology and specific requirements of a data processing contract should review it to protect the institution's

interests. Since the contract likely sets the terms for a multiyear understanding between the parties, all items agreed on during negotiations must be included in the final signed contract. Verbal agreements are generally not enforceable, and contracts should include wording such as "no oral representations apply" to protect both parties from future misunderstandings. The contract should also establish baseline performance standards for data processing services and define each party's responsibilities and liabilities, where possible.

Although contracts between financial institutions and external data processing companies are not standardized in a form, they share a number of common elements. For a further discussion of IS contract elements and considerations, see the FFIEC's *Information System Examination Handbook.*

Contract Practices to Avoid

Some financial institutions have entered into data processing service contracts that contain provisions that may adversely affect its interests. These contract provisions include extended terms (up to 10 years), significant increases in costs after the first few years, and substantial cancellation penalties. In addition, some service contracts improperly offer inducements that allow a bank to retain or increase capital by deferring losses. These inducements usually deal with the disposition of assets or avoidance of expense recognition for current charges. Institutions experiencing earnings and capital problems seem particularly attracted to inducements such as—

- a servicer's offer to purchase certain assets of the institution (for example, computer equipment or foreclosed real estate) at book value, which exceeds market value;
- the servicer's offer to provide capital to the institution by purchasing capital stock from it;
- servicer-provided cash bonuses once the conversion is complete;
- the servicer providing up-front cash to the institution; and
- the servicer allowing the bank to defer conversion costs or processing fees.

These inducements may benefit the bank in the short term, but the servicer usually recoups the costs of inducements by charging a premium for the data processing services it provides. These excessive fees may adversely affect a bank's financial condition over the long term. Furthermore, the way in which the institution accounts for such inducements is typically inconsistent with generally accepted accounting principles (GAAP) and regulatory reporting requirements.

Additionally, section 225 of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) states, "An (FDIC-) insured depository institution may not enter into a written or oral contract with any person to provide goods, products or services to or for the benefit of such depository institution if the performance of such contract would adversely affect the safety or soundness of the institution." An institution should ascertain during contract negotiations whether the servicer can provide a level of service that meets the needs of the institution over the life of the contract. The institution is also responsible for making sure it accounts for each contract in accordance with GAAP. Regulatory agencies consider contracting for excessive servicing fees and/or failing to properly account for such transactions an unsafe and unsound practice. When entering into service agreements, banks must ensure that the method by which they account for such agreements reflects the substance of the transaction and not merely its form. See FFIEC Supervisory Policy SP-6, "Interagency Statement on EDP Service Contracts."

RISK OF TERMINATION

Many financial institutions have become so dependent on outside data processing servicers that any extended interruption or termination of service would severely disrupt normal operations. Termination of services generally occurs according to the terms of the service contract. Banks may also experience termination of contracts that is caused by a physical disaster to the servicer, such as a fire or flood, or bankruptcy, which are described below. The serviced institution must prepare differently for each type of termination. The contract should allow either party to terminate the agreement by notifying the other party 90 to 180 days in advance of the termination date, which should give a serviced institution adequate time to locate and contract with another servicer.

Termination caused by physical disaster occurs infrequently, but it may or may not present the institution with a more serious problem than termination by contract. If the servicer has complied with basic industry standards and maintains a proper contingency plan, disruption of services to users will ordinarily be minimal. The contingency plan must require the servicer to maintain current data files and programs at an alternate site and arrange for back-up processing time with another data center. At a minimum, these provisions should allow the servicer to process the most important data applications. Since equipment vendors can often replace damaged machines within a few days, the servicer should be able to resume processing with little delay. The servicer, not the serviced institution, is responsible for the major provisions of its back-up contingency plan. However, the institution must have a plan that complements the servicer's.

Termination caused by bankruptcy of the servicer is potentially the most devastating to a serviced institution: There may not be advance notice of termination or an effective contingency plan (because servicer personnel may not be available). In this situation, the serviced institution is responsible for finding an alternate processing site.

Although user institutions can ordinarily obtain data files from a bankrupt servicer with little trouble, the programs (source code) and documentation required to process those files are normally owned by the servicer and are not available to the user institutions. These programs are often the servicer's only significant assets. Therefore, a creditor of a bankrupt servicer, in an attempt to recover outstanding debts, will seek to attach those assets and further limit their availability to user institutions. The bankruptcy court may provide remedies to the user institutions, but only after an extended length of time.

An escrow agreement is an alternative to giving vendors sole control of the source code. In this agreement, which should either be part of the service contract or a separate document, the financial institution would receive the right to access source programs under certain conditions, such as discontinued product support or the financial insolvency of the vendor. A third party would retain these programs and related documents in ''escrow.'' Periodically, the financial institution should determine that the source code maintained in escrow is up-to-date, for example, an independent party should verify the version number of the software. Without an escrow agreement, a serviced institution has two alternatives: (1) Pay off the creditor and hire outside specialists to operate the center or (2) convert data files to another servicer. Either alternative is likely to be costly and cause severe operating delays.

Therefore, the importance of monitoring the servicer's financial condition cannot be overemphasized. In order to fulfill its fiduciary responsibility, a bank will normally determine the financial viability of its servicer annually. Once the review is complete, management must report the results to the board of directors or a designated committee. At a minimum, management's review should contain a careful analysis of the servicer's annual financial statement. Management may also use other sources of information to determine a servicer's condition. Reports of independent auditors and reports obtainable from appropriate regulatory agencies may contain information that can be vital in determining a servicer's financial condition. Information provided by public media, such as trade magazines, newspapers, and television, may also be used. If the servicer's financial condition is unstable or deteriorating, but the servicer remains in operation, its financial problems may cause it to take drastic measures that may jeopardize the quality of its service and possibly the integrity of the data in its possession. Banks should consider a servicer's failure to provide proper financial data as an indication of unsound operating practices.

AUTOMATED CLEARINGHOUSE

Automated clearinghouses (ACHs) form a nationwide electronic payments system used by a large number of depository institutions and corporations. ACH rules and regulations are established by the National Automated Clearing House Association (NACHA) and the local ACH associations, and they are referenced in the Federal Reserve Banks' ACH operating circulars.

ACH is a value-based system that supports both credit and debit transactions. In ACH credit transactions, funds flow from the depository institution originating the transaction to the institutions receiving the transactions. Examples of credit payments include direct deposits of payroll, dividend and interest payments, Social

Security payments, and corporate payments to contractors and vendors. In a debit transaction, funds flow from the depository institution receiving the transaction to the institution originating the transaction. Examples of ACH debit transactions include collection of insurance premiums, mortgage and loan payments, consumer bill payments, and transactions to facilitate corporate cash management. ACH transactions are deposited in batches at Federal Reserve Banks (or private-sector ACH processors) for processing one or two business days before the settlement date. These transactions are processed and delivered to the receiving institutions through the nightly processing cycle for a given day.

ACH transactions continue to grow significantly. Additional uses of the ACH continue to be developed as depository institutions, corporations, and consumers realize its efficiency and low cost compared with large-dollar payments systems and check payments. One area of growth is the use of debit transactions for the collection of large payments due to the originator, such as cash concentration of a company's nationwide branch or subsidiary accounts into one central account and other recurring contractual payments.

While several organizations can be involved in processing ACH transactions, the Federal Reserve System is the principal ACH processor. For the Federal Reserve ACH system, depository institutions send ACH transactions to and receive ACH transactions from one of the Federal Reserve processing sites via a communications system linking each location. Access may be by direct computer interface or intelligent terminal connections.

As with any funds-transfer system, the ACH system has inherent risks, including error, credit risk, and fraud. When reviewing ACH activities, examiners should evaluate the following:

- agreements covering delivery and settlement arrangements maintained by the depository institution as an originator and/or receiver of ACH transactions
- monitoring of the institution's and customer's intraday positions
- balancing procedures of ACH transactions processed
- the credit policy and effectiveness of procedures to control intraday and overnight overdrafts, resulting from extensions of credit to an ACH customer, to cover the value of credit transfers originated (Since the ACH is a value-dated mechanism and transactions may be originated one or two days before the settlement date, the originating institution is exposed to risk from the time it submits ACH credit transfers to the ACH processor to the time its customer funds those transfers.)
- uncollected funds controls and the related credit policy for deposits created through ACH debit transactions (Although immediately available funds have been provided by the Federal Reserve for debit transactions deposited on a given day, the debits have not been posted to the payee's account and could be returned for insufficient funds or other reasons (for example, a court order).)
- exception reports (that is, large-item and new-account reports)
- control procedures for terminals through which additions, deletions, and other forms of maintenance could be made to customer databases
- the retention of all entries, return entries, and adjustment entries transmitted to and received from the ACH for a period of six years after the date of transmittal.

RETAIL FUNDS-TRANSFER SYSTEMS

Automation has enabled banks to electronically perform many retail banking functions formerly handled manually by tellers, bookkeepers, data entry clerks, and other banking personnel. Accordingly, the need for physical banking facilities and related staff has been reduced. Electronic funds transfer (EFT) and related banking services have also brought access to and control of accounts closer to the consumer through the use of widely distributed unmanned terminals and merchant facilities. EFT-related risk to a financial institution for individual customer transactions is generally low, since the transactions are usually for relatively small amounts. However, weaknesses in controls that could lead to incorrect or improper use of several accounts could lead to significant losses to or class action suits against a financial institution. Examinations of retail EFT facilities should focus on the potential large-scale risks of a given product. Examples of retail EFT systems include automated teller machines, point-of-sale networks, debit and ''smart'' cards, and home banking.

Automated Teller Machines

An automated teller machine (ATM) is an electronic funds-transfer terminal that is capable of performing many routine banking services for the customer. ATMs handle deposits, transfers between savings and checking accounts, balance inquiries, withdrawals, small short-term loans, and loan payments. ATMs may also handle other transactions, such as cash advances on credit cards, statement printing, and postage stamp dispensing. ATMs usually operate 24 hours a day and are located not only on bank premises but also in other locations, such as shopping malls and businesses. Daily withdrawals are usually, and should be, limited to relatively small amounts ($200 to $500). Deposits are processed in the same manner as if they were handled by a teller. ATMs are generally activated through the use of a plastic card encoded with a machine-readable customer identification number and entry, by the customer, of a corresponding personal identification number (PIN). Some financial institutions may refer to this identification number as the personal identification code (PIC).

ATMs operate in either off-line or on-line mode. Off-line transactions are those that occur when the customer's account balance is not available for verification. This situation can be the result of telecommunication problems between the financial institution and the ATM network. In addition, an off-line transaction can occur when a customer's account balance is not available because the financial institution is updating its files. Financial institutions usually update their files during low-volume periods. In either case, transactions are usually approved up to the daily withdrawal limit, which is a risk to the bank because a customer can withdraw more than is available in the account as long as the account balance is less than the withdrawal limit. On-line systems are directly connected to a financial institution's computer system and the corresponding customer account information. The computer processes each transaction immediately and provides immediate account-balance verification. With either system, a card is normally captured (kept by the ATM) if misuse is indicated (for example, the card has been reported stolen or too many attempts have been made with an invalid PIN).

Financial institutions are usually members of several ATM networks, which can be regional and national. Through these networks, separate institutions allow each other's customers to use their ATM machines. This is known as an interchange system. To be involved in an interchange system, a financial institution must either be an owner or member of the ATM network.

Fraud, robbery, and malfunction are the major risks of ATMs. The use of plastic cards and PINs are a deterrent, but there is still the risk that an unauthorized individual may obtain them. Customers may even be physically accosted while making withdrawals or deposits at ATM locations. Some institutions have decreased this risk by installing surveillance cameras and access-control devices. For example, the ATM card can be used as an access-control device, unlocking the door to a separate ATM enclosure and relocking it after the customer has entered. Fraud may also result from risks associated with the issuance of ATM cards, the capture of cards, and the handling of customer PINs. Appropriate controls are needed to prevent the financial institution's personnel from unauthorized access to unissued cards, PINs, and captured cards.

Point-of-Sale Systems

A point-of-sale (POS) system transaction is defined as an electronic transfer of funds from a customer's checking or savings account to a merchant's account to pay for goods or services. Transactions are initiated from POS terminals located in department stores, supermarkets, gasoline stations, and other retail outlets. In an electronic POS system, a customer pays for purchases using a plastic card (such as an ATM card). The store clerk enters the payment information into the POS terminal and the customer verifies the transaction by entering a PIN. This results in a debit to the customer's account and a credit to the merchant's account.

POS transactions may either be processed though single-institution unshared systems or multi-institution shared networks. Participants in a shared system settle daily, on a net transaction basis, between each other. In unshared systems, the merchants and customers have accounts with the same financial institution. Thus, the need to settle between banks is eliminated.

As with other EFT systems, POS transactions are subject to the risk of loss from fraud, mistakes, and system malfunction. POS fraud is caused by stolen cards and PINs, counterfeit

cards, and unauthorized direct computer access. The system is also susceptible to errors such as debiting or crediting an account by too much or too little, or entering unauthorized transactions. For the most part, POS systems usually deal with these risks by executing bank-merchant and bank-customer contracts that delineate each party's liabilities and responsibilities. Also, consumers are protected by state and federal statutes limiting their liability if they give notice of a lost, stolen, or mutilated card within a specified time period. Other risks inherent in POS systems are computer malfunction or downtime. Financial institutions offering POS services should provide for back-up of their records through adequate contingency planning.

Internal control guidelines for POS systems should address the following:

- confidentiality and security of customer account information, including protection of PINs
- maintenance of contracts between banks and merchants, customers and banks, and banks and networks
- policies and procedures for credit and check authorization, floor limits, overrides, and settlement and balancing
- maintenance of transaction journals to provide an adequate audit trail
- generation and review of daily exception reports with provisions for follow-up of exception items
- provisions for back-up and contingency planning
- physical security surrounding POS terminals

Debit and Smart Cards

Other funds transfer–related activities that use a plastic card and PIN access are debit and "smart" cards. While not EFT systems by themselves, they may be used in conjunction with EFT systems. The cards may draw against available balances in a stored value from a related deposit account. They can be used for currency withdrawals at ATMs or for the direct purchase of goods or services from retailers using POS or paper-based settlement systems.

Smart cards contain a microchip that stores customer account profiles and stored-value balances, as well as a record of transactions. When the card is used to make a purchase or withdraw cash, the terminal equipment deducts the amount from the balance remaining in the card's microchip memory. Once the card's stored value is exhausted, it will need to be replenished. Smart cards do not require on-line terminals.

Home Banking

Home banking allows customers to inquire about their bank account balances, pay bills, and transfer funds between their own bank accounts via telecommunication lines. These services, which were originally performed solely by telephone, may now be performed by either telephone or a personal computer. To access an account, the customer dials a designated phone number and enters an account number and PIN. If a transfer is to be made, the customer also enters the merchants' identification numbers, customer's account number with each merchant, and the amount and date of payment. If the telephone is used, the data are verified by a call-back to the customer via voice response equipment or, if by computer, the data are transmitted back to the computer terminal screen. The customer then presses a designated key to confirm the transaction. Financial institutions complete the transaction by—

- transferring funds directly from the customer's account to the merchant's account, if the accounts are in the same bank;
- transferring funds to a holding account and sending a check and printout to the merchant; or
- transferring funds to the merchant's bank directly or through the ACH system.

Internal Controls for Retail EFT Systems

Regardless of the EFT system employed, financial institutions should ensure that adequate internal controls are in place to minimize errors, discourage fraud, and provide an adequate audit trail. Recommended internal control guidelines for all systems include—

- establishing measures to establish proper customer identification (such as PINs) and maintain their confidentiality;
- issuing of a receipt to the customer for each transaction;

- installing a dependable file maintenance and retention system to trace transactions;
- producing, reviewing, and maintaining exception reports to provide an audit trail;
- requiring customers of each service to sign agreements that clearly define the responsibilities of the customer and the financial institution; and
- producing and forwarding customers' statements periodically so they can review transactions made during the period and detect unauthorized transfers.

Recommended internal control guidelines for transfer and bill-paying systems include—

- allowing customers to pay bills or transfer funds only from their own accounts,
- requiring that all transactions be preauthorized for specifically stated customer accounts, and
- discouraging payments to third parties without written authorization.

The most critical element of EFT systems is the need for undisputed identification of the customer. Particular attention should be given to the customer identification systems. The most common control is the issuance of a unique PIN that is used in conjunction with a plastic card or, for noncard systems, an account number. The following PIN control guidelines, as recommended by the American Bankers Association, are encouraged.

Storage:

- PINs should not be stored on other source instruments (for example, plastic cards).
- Unissued PINs should never be stored before they are issued. They should be calculated when issued, and any temporary computer storage areas used in the calculation should be cleared immediately after use.
- PINs should be encrypted on all files and databases.

Delivery:

- PINs should not appear in printed form where they can be associated with customers' account numbers.
- Bank personnel should not have the capability to retrieve or display customers' PIN numbers.
- All the maintenance to PINs stored in databases should be restricted. Console logs and security reports should be reviewed to determine any attempts to subvert the PIN security system.
- PIN mailers should be processed and delivered with the same security accorded the delivery of bank cards to cardholders. (They should never be mailed to a customer together with the card).

Usage:

- The PIN should be entered only by the cardholder and only in an environment that deters casual observation of entries.
- The PIN should never be transmitted in unencrypted form.
- PIN systems should record the number of unsuccessful PIN entries and should restrict access to a customer's account after a limited number of attempts.
- If a PIN is forgotten, the customer should select a new one rather than have bank personnel retrieve the old one, unless the bank has the ability to generate and mail a hard copy of the PIN directly to the customer without giving bank personnel the ability to view the PIN.

Control and security:

- Systems should be designed, tested, and controlled to preclude retrieval of stored PINs in any form.
- Application programs and other software containing formulas, algorithms, and data used to calculate PINs must be subject to the highest level of access for security purposes.
- Any data-recording medium, for example, magnetic tape and removable disks, used in the process of assigning, distributing, calculating, or encrypting PINs must be cleared immediately after use.
- Employees with access to PIN information must be subject to security clearance and must be covered by an adequate surety bond.

System design:

- PIN systems should be designed so that PINs can be changed without reissuing cards.
- PINs used on interchange systems should be designed so that they can be used or changed without any modification to other participants' systems.

- Financial institutions electing to use encryption as a security technique for bank card systems are strongly encouraged to consider the data encryption standards established by the National Bureau of Standards.

In addition, institutions should consider controls over other aspects of the process. Control guidelines appropriate for plastic cards include those covering procurement, embossing/encoding, storage, and mailing. It is also appropriate to have controls over terminal sharing and network switching. Institutions should address back-up procedures and practices for retail funds-transfer systems and insurance coverage for these activities.

END-USER COMPUTING

End-user computing results from the transfer of information-processing capabilities from centralized data centers onto the user's desktop. End-user computing systems may range in size and computing power from laptop notebook computers to stand-alone personal computers, client-server networks, or small systems with sufficient computing power to process all significant applications for a financial institution. Small systems that are entirely supported by a hardware or software vendor are referred to as "turnkey" systems. Control considerations discussed throughout this subsection generally apply to all end-user computing systems.

In many cases, end-user systems are linked by distributed processing networks. Linking several microcomputers together and passing information between them is called networking. A system configured in this manner is commonly called a local area network (LAN). The ability to decentralize the data processing function is largely a result of the development of powerful microcomputers or PCs. Microcomputers are now powerful enough to process significant applications when used as stand-alone systems. These micrcomputers can also be connected to a host computer and configured to serve as a data entry or display terminal. In this terminal-emulation mode, information can be passed between the host and the PC with the processing occurring at either machine.

When linked by a network, end-user computing offers several advantages to financial institutions, including—

- low cost compared to other platforms,
- efficiency through the sharing of resources,
- ease of expansion for future growth,
- enhanced communication capabilities,
- portability,
- data availability, and
- ease of use.

While end-user computing systems provide several advantages, they also have greater risks to data integrity and data security, including—

- difficulty in controlling access to the system and in controlling access to confidential information that may be stored on individual personal computers and not on the system (such as payroll records, spreadsheets, budgets, and information intended for the board of directors of the financial institution);
- the lack of sophisticated software to ensure security and data integrity;
- insufficient capabilities to establish audit trails;
- inadequate program testing and documentation; and
- the lack of segregated duties of data-entry personnel.

As the trend toward distributed processing continues, financial institutions should have proper policies, procedures, and reporting to ensure the accurate and timely processing of information. The controls governing access in an end-user computing environment should be no less stringent than those used in a traditional mainframe environment. Strict rules should govern the ability of users to access information. As a general rule, no user should be able to access information that is beyond what is needed to perform the tasks required by his or her job description. In this new environment, management and staff should assume responsibility for the information assets of the organization.

1. To identify the information systems used by each financial institution in conducting its daily business.
2. To assess the types and levels of risks associated with information systems services.
3. To assess the adequacy of the system of controls to safeguard the integrity of the data processed in all information systems.
4. To determine if the board has developed, implemented, and tested contingency plans that will ensure the continued operation of the institution's data processing tasks if an unforeseen event occurs.
5. To ascertain if management has an effective system in place to monitor the financial condition of key data processing servicers.
6. To determine the effectiveness of and compliance with information system (IS) practices, procedures, and policies.
7. To determine the scope and adequacy of the IS audit function.
8. To assess the types and levels of risks associated with information systems services received from the institution or other vendors and assess the quality of controls over those risks.
9. To determine if the institution is complying with all applicable laws, rules, and regulations.
10. As appropriate, to complete or update the internal control questionnaire.
11. To prepare comments for the report of examination on significant deficiencies and recommended corrective action.
12. To update the workpapers with any information that will facilitate future examinations.

1. Identify and list/update the major automated banking applications. For those processed by outside services, indicate the name and location of each servicer.
2. Review any recent EDP reports of examination performed by the Federal Reserve or other regulatory authorities and note any deficiencies. Also, obtain a listing of any deficiencies noted in the latest audit review. Determine that all deficiencies have been properly corrected. (If EDP reports of examination are not found for all servicers, contact the Federal Reserve District Office.)
3. Complete or update the Computer Services Internal Control Questionnaire for specific applications identified in step 1.
4. Determine whether the bank has properly notified the Federal Reserve Bank of new computer services in accordance with the Bank Service Corporation Act, 12 USC 1865.
5. Organize the results of the Internal Control Questionnaire and discuss the following with appropriate bank management:
   a. Internal control exceptions and noncompliance with written policies, practices and procedures.
   b. Violations of law.
   c. EDP servicing contract exceptions.
   d. Overall evaluation of services provided to the bank, including any problems experienced with the servicer.
6. Prepare comments for the report of examination on significant deficiencies and recommended corrective action.
7. Update the workpapers with any information that will facilitate future examinations.

Review the bank's internal controls, policies, practices and procedures regarding computer services. The bank's system should be documented in a complete, concise manner and should include, where appropirate, narrative description, flowcharts, copies of forms used and other pertinent information. Items marked with an asterisk require substantiation by observation or testing.

SERVICER SELECTION

1. Before entering into any service arrangement, did management consider:
   a. Alternative servicers and related costs?
   b. Financial stability of the servicer?
   c. Control environment at the data center?
   d. Emergency backup provisions?
   e. The ability of the servicer to handle future processing requirements?
   f. Requirements for termination of service?
   g. Quality of reports?
   h. Insurance requirements?
2. Is there an annual re-evaluation of the servicer's performance that includes:
   a. Financial condition?
   b. Costs?
   c. Ability to meet future needs?
   d. Quality of service?

CONTRACTS

*3. Is each automated application covered by a written contract?
*4. Were contracts reviewed by legal counsel?
5. Does each service contract cover the following areas:
   a. Ownership and confidentiality of files and programs?
   b. Liability limits for errors and omissions?
   c. Frequency, content, and format of input and output?
   d. Fee structure, including:
      1. Current fees?
      2. Provisions for changing fees?
      3. Fees for special requests?
   e. Provisions for backup and record protection?
   f. Notice required (either party) for termination of service and the return of customer records in machine readable form?
   g. Time schedules for receipt and delivery of work, including processing priorities?
   h. Insurance carried by the servicer?
   i. Liability for documents in transit?
   j. Audit responsibility?
   k. Provision to supply the serviced institution with yearly financial statements (preferably audited with both consolidated and unconsolidated figures when applicable)?

INSURANCE

*6. Does the serviced institution's insurance coverage include the following provisions:
   a. Extended blanket bond fidelity coverage to employees of the servicer?
   b. Insurance on documents in transit including the cash letter?
   c. If the serviced institution is relying on the servicer and/or an independent courier for insurance covered in a and b above, is adequate evidence of that coverage on file?

OPERATIONAL CONTROLS

*7. Are duties adequately separated for the following functions:
   a. Input preparation?
   b. Operation of data-entry equipment?
   c. Preparation of rejects and unposted items for re-entry?
   d. Reconcilement of output to input?
   e. Output distribution?
   f. Reconcilement of output to general ledger?
   g. Posting general ledger?
8. Are employee duties periodically rotated for control and training purposes?
9. Do supervisors and/or officers:
   a. Adequately review exception reports?
   b. Approve adjusting entries?

10. Are servicer personnel prohibited from initiating transactions or correcting data?
11. Are individuals prohibited from initiating or authorizing a transaction and then executing it?
12. Are employees at the serviced institution required to be absent from their duties (by vacation or job rotation) for two consecutive weeks?
13. Are master file changes:
    a. Requested in writing?
    b. Approved by a supervisor?
    c. Verified correct after processing?

*14. Are exception reports prepared for:
    a. Unposted and rejected items?
    b. Supervisory override transactions?
    c. Master file changes (before and after)?
    d. Dormant account activity?

*15. Does each user department:
    a. Establish dollar and non-dollar controls before they are sent for processing?
    b. Receive all scheduled output reports even when the reports contains no activity?
    c. Review all output and exception reports?

*16. Are current user manuals available for each application and are they used by the employees?
17. Does each user manual cover:
    a. Preparation and control of source documents?
    b. Control, format and use of output?
    c. Settlement and reconcilement procedures?
    d. Error correction procedures?
18. Are users satisfied with the servicer's performance and output reports (If not, explain)?
19. Are computer generated entries subsequently reviewed and approved by appropriate officials?

*20. Does the serviced institution microfilm all source documents, including cash letters, before they leave the premises? If so:
    a. Is the microfilm stored in a secure location with limited access?
    b. Is an inventory and usage log maintained?

COMMUNICATION CONTROLS

*21. Is user access to the data communication network controlled by:
    a. User number?
    b. Physical keys?
    c. Passwords?
    d. Other (Explain)?
22. Are periodic changes made to numbers/keys/passwords and are they adequately controlled?
23. Are identification numbers/passwords suppressed on all printed output and video displays?
24. Are terminals controlled as to:
    a. What files can be accessed?
    b. What transactions can be initiated?
    c. Specific hours of operations?
25. Do controls over restricted transactions and overrides include:
    a. Supervisory approval?
    b. Periodic management review?

*26. Are there exception reports which indicate:
    a. All transactions made at a terminal?
    b. All transactions made by an operator?
    c. Restricted transactions?
    d. Correcting and reversing entries?
    e. Dates and times of transactions?
    f. Unsuccessful attempts to gain access to the system and/or to restricted information?
    g. Unusual activity?
27. Overall, are there adequate procedures in effect that prevent unauthorized use of the data communication systems?
28. To backup on-line systems:
    a. Are off-line capabilities available (Explain)?
    b. Are the off-line capabilities periodically tested?

AUDITING

29. Is there an internal auditor or member of management not directly involved in EDP activities who has been assigned responsibility for the audit function?
30. Does that individual have any specialized audit and/or EDP training?
31. Are there written internal audit standards and procedures that require:
    a. Review of all automated applications?
    b. Reports to the board of directors?
    c. Audit workpapers?
32. Does the person responsible for the audit function perform the following procedures:

a. Test balancing procedures of all automated applications including the disposition of rejected and unposted items?
b. Periodically sample masterfile information to verify it against source documents?
c. Spot check computer calculations such as interest on deposits, loans, securities, loan rebates, service charges and past due loans?
d. Verify output report totals?
e. Check accuracy of exception reports?
f. Review masterfile changes for accuracy and authorization?
g. Trace transactions to final disposition to determine adequacy of audit trails?
h. Review controls over program change requests?
i. Perform customer confirmations?
j. Other (Explain)?

33. Does the serviced institution obtain and review the servicer's internal or external audits and/or third-party reviews? (If yes, detail exceptions and corrective action.)
34. Has the serviced institution used an independent auditor to evaluate EDP servicing (if yes, detail exceptions and corrective action)?
35. Is the overall audit program for serviced applications considered adequate?

CONCLUSION

36. Does the foregoing information constitute an adequate basis for evaluating internal control in that there are no significant deficiencies in areas not covered in this questionnaire that impair any controls. Explain negative answers briefly and indicate any additional examination procedures deemed necessary.
37. Based on a composite evaluation, as evidenced by answers to the foregoing questions, internal control is considered (adequate/inadequate).

INTRODUCTION

Dividends are distributions of earnings to owners.[1] Dividends can influence an investor's willingness to purchase corporate stock since the investor generally expects reasonable investment returns. Although dividends usually are declared and paid either in cash or stock, occasionally they are used to distribute real or personal property. Dividend payments may reduce capital in some banks to the point of supervisory concern. Accordingly, in 1985, the Federal Reserve Board issued a policy statement on the payment of dividends by state member banks and bank holding companies. In addition, certain statutory limitations apply to the payment of dividends.

Examiners should also be aware of a bank's parent company cash flow needs. In addition to the payment of dividends, the parent company may need cash for debt service or to fund its operations. When establishing dividend levels from a bank subsidiary, the parent company should not set a dividend rate that will place undue pressure on the bank's ability to maintain an adequate level of capital.

1985 POLICY STATEMENT ON PAYMENT OF DIVIDENDS

Declaration of a dividend requires formal action by the board of directors to designate the medium of payment, dividend rate, shareholder record date, and date of payment. Dividends may be declared[2] at the discretion of the board. Dividends are recorded on the bank's books as a liability (dividends payable) on the date of declaration.

Adequate capital is critical to the health of individual banking organizations and to the safety and stability of the banking system. A major determinant of a financial institution's capital adequacy is earnings strength and whether earnings are retained or paid to shareholders as cash dividends. Dividends are the primary way that banking organizations provide return to shareholders on their investment.

During profitable periods, dividends represent a return of a portion of a banking organization's net earnings to its shareholders. During less profitable periods, dividend rates are often reduced or sometimes eliminated. The payment of cash dividends that are not fully covered by earnings, in effect, represents the return of a portion of an organization's capital at a time when circumstances may indicate instead the need to strengthen capital and concentrate financial resources on resolving the organization's problems.

As a matter of prudent banking, therefore, a bank or bank holding company generally should continue its existing rate of cash dividends on common stock only if—

- the organization's net income available to common shareholders over the past year has been sufficient to fully fund the dividends; and
- the prospective rate of earnings retention appears consistent with the organization's capital needs, asset quality, and overall financial condition.

Any banking organization whose cash dividends are inconsistent with either of these criteria should seriously consider reducing or eliminating its dividends. Such an action will help conserve the organization's capital base and help it in weathering a period of adversity.

A banking organization that is experiencing financial problems or that has inadequate capital should not borrow to pay dividends; this would result in increased leverage at the very time the organization needs to reduce its debt or conserve its capital. Similarly, the payment of dividends based solely or largely on gains resulting from unusual or nonrecurring events may be imprudent. Unusual or nonrecurring events may include the sale of assets, effects of accounting

1. Other payments not called dividends may also be distributions of earnings to owners. These distributions or "constructive dividends" may be termed fees, bonuses, or other payments. Constructive dividends are distinct from legitimate fees, bonuses, and other payments, which are reasonable, adequately documented, and for valuable goods and services provided to the bank. Constructive dividends may create a potential tax liability and indicate control issues or insider self-dealing, and may portend shareholder lawsuits against insiders, board members, and the bank.

2. At a minimum, board of directors' minutes approving declaration and payment of a dividend should include three components: (1) "as of" date to identify shareholders of record to receive the dividend (date of record), (2) amount/description of the dividend, and (3) identification of the date on which the dividend payment is to take place (date of payment). There may also be additional legal requirements that should be documented depending on state laws and the nature of the dividend.

changes, the postponement of large expenses to future periods, or negative provisions to the allowance for loan and lease losses.

STATUTORY LIMITATIONS

Three major federal statutory limitations govern the payment of dividends by banks. These limitations, included in sections 1831o, 56, and 60 of title 12 of the United States Code (USC), apply to cash dividends or property dividends paid with assets other than cash. However, common stock dividends (dividends payable in common stock to all the common shareholders of the bank) may be paid regardless of the statutory limitations since such dividends do not reduce the bank's capital. In addition, the examiner needs to be aware of any state law(s) governing dividend payments.

Prompt Corrective Action

Section 1831o, also referred to as the prompt-corrective-action (PCA) provision, was adopted in 1991 as part of the Federal Deposit Insurance Corporation Improvement Act. Section 1831o applies to all insured depository institutions including state member banks and is implemented through section 208.35 of Regulation H. This regulatory section prohibits the payment of dividends in cases where a bank is deemed to be undercapitalized or where the payment of the dividend would make the bank undercapitalized in accordance with the PCA framework. An organization that is undercapitalized for purposes of PCA must cease paying dividends for as long as it is deemed to be undercapitalized. Once earnings have begun to improve and an adequate capital position has been restored, dividend payments may resume in accordance with federal and state statutory limitations and guidelines. Sections 56 and 60

Sections 56 and 60 (sections 5204 and 5199(b) of the Revised Statutes) were first adopted as part of the National Bank Act more than 100 years ago. Although these sections were made applicable to national banks, they also apply to state member banks under the provisions of section 9 of the Federal Reserve Act.[3] These sections are implemented through section 208.19 of regulation H.

Under section 56, prior regulatory and shareholder approval must be obtained if the dividend would exceed the bank's undivided profits (retained earnings) as reportable in its Reports of Condition and Income (call reports).[4] In addition, the bank may also include amounts contained in its surplus account, if the amounts reflect transfers made in prior periods of undivided profits and if regulatory approval for the transfer back to undivided profits is obtained.

Under section 60, prior regulatory approval to declare a dividend must be obtained if the total of all dividends declared during the calendar year, including the proposed dividend, exceeds the sum of the net income earned during the year-to-date and the retained net income of the prior two calendar years as reported in its call reports. In determining this limitation, any dividends declared on common or preferred stock during the period and any required transfers to surplus or a fund for the retirement of any preferred stock must be deducted from net earnings to determine the net income and retained net income.[5]

These statutory limitations are tied to the declaration date of the dividend, because at that time shareholders expect the dividends will be paid, a liability is recorded, and the bank's capital is reduced. If the bank's board of directors wishes to declare a dividend between call report dates, the earnings or losses incurred since the last call report date should be considered in the calculation. Thus, if a bank's dividend-paying capacity might be limited under sections 56 or 60, the bank should ensure it has sufficient capacity to declare the dividend by maintaining sufficient documentation to sub-

3. State-chartered banks that are not members of the Federal Reserve System (''state nonmember banks'') are not subject to sections 56 and 60. However, they may be subject to similar dividend restrictions under state law.

4. Although the language of section 56 might imply that a dividend cannot be declared in excess of the limit even if regulatory approval were obtained, a ''return of capital'' to shareholders is allowed under section 59 if the bank obtains prior regulatory approval and approval of at least two-thirds of each class of shareholders.

5. In rare circumstances where the surplus of a state member bank is less than what applicable state law requires the bank maintain relative to its capital stock account, the bank may be required to transfer amounts from its undivided profits account to surplus. This may arise, for example, because some states require surplus to equal or exceed 100 percent of the capital stock account. Such required transfers would reduce the section 60 calculation.

stantiate its earnings or losses on an accrual basis for the period since the last call report date.

REQUEST FOR REGULATORY APPROVAL

When regulatory approval is required for dividend payments under section 56 or 60, the request should be submitted to the appropriate Federal Reserve Bank. In section 265.11 of the Rules Regarding Delegation of Authority, subparagraph (e)(4), the Reserve Banks have been delegated authority to permit a state member bank to declare dividends in excess of section 60 limits. Before approving the request, the Reserve Bank should consider if the proposed dividend is consistent with the bank's capital needs, asset quality, and overall financial condition.

If applicable, examiners should verify that prior approval was obtained from the Federal Reserve Bank, and, if required, at least two-thirds of each class of stockholders before the dividend was paid. Violations of law or nonconformance with the Federal Reserve Board's policy statement should be discussed with bank management and noted in the examination report.

1. To determine if the policies, practices, procedures, and internal controls regarding dividends are adequate and whether they are being followed.
2. To determine if bank directors, officers, and employees are operating in compliance with the established guidelines.
3. To evaluate the propriety and consistency of the bank's present and planned dividend policy in light of existing conditions and future plans.
4. To determine that the scope of the audit function is adequate.
5. To determine if any dividends declared exceed the section 1831o limitation, and, if so, to inform the enforcement section of the Federal Reserve Bank.
6. To determine if any dividends declared exceed the section 56 and 60 limitations, and, if so, whether the respective required approvals from the Federal Reserve Bank and shareholders were obtained.
7. To determine whether the dividend payments comply with the Board's policy statement concerning dividend payments of banks and bank holding companies.
8. To determine compliance with other applicable laws and regulations.
9. To initiate corrective action when policies, procedures, or internal controls are deficient or when violations of laws or regulations have been noted.

1. If selected for use, complete or update the dividends section of the Internal Control Questionnaire.
2. Based on the evaluation of internal controls and the work performed by internal/external auditors, determine the scope of the examination.
3. Test for compliance with policies, practices, procedures and internal controls. Also obtain a listing of any deficiencies noted in the latest internal/external auditor reports from the examiner assigned "Internal Control." Determine if appropriate corrective action has been taken.
4. a. If dividends were declared since the last examination, complete the Dividend Limitations worksheets to determine whether the bank was in compliance with the following sections of the U.S. Revised Statutes, as they are interpreted by Section 208.19 of Regulation H:
   - 12 USC 60 (section 5199, Revised Statutes) which establishes restriction based upon the current and prior two years' retained net income, as adjusted for required transfers to surplus. The table included below may be used for the calculation.
   - 12 USC 56 (section 5204, Revised Statutes) which establishes restriction on dividends based on the bank's undivided profits, as adjusted for any surplus transferred, with prior regulatory approval, back to undivided profits and the excess, if any, of statutory bad debts over the allowance of loan and lease losses.

Section 60 Computation

	Year 19	19	19	Total
Net Income (Loss) (Schedule RC, Item 26a)	____	____	____	____
Less: Required transfers to surplus under state law (generally zero)	____	____	____	____
Less: Common and preferred stock dividends declared (Schedule RI-A, Item 7 + Item 8)	____	____	____	____
Retained net profits available for dividends	____	____	____	____*

* Section 60 Limitation

Section 56 Computation

Undivided profits (Schedule RC, Item 26a)	____
Add: Surplus in excess of state regulatory requirements that was earned and is transferred, with prior regulatory approval, back to undivided profits	____
Less: Excess of statutory bad debts over the allowance for loan and lease losses (generally zero)	____
Section 56 Limitation	____

References in the table are to schedules in the Reports of Condition and Income.

b. In the above, determine whether the dividend exceeded the section 56 or 60 limits and, if so, whether the dividend received prior approval. Dividends declared in excess of the section 56 limitation must receive prior Federal Reserve approval and approval of at least two-thirds of the shares of each class of stock outstanding, pursuant to 12 USC 59. Dividends declared in excess of the Section 60 limitation must receive prior Federal Reserve approval.

5. Review the examination findings with the examiner-in-charge in preparation for discussion with appropriate management.
6. Prepare comments of the examination report on the bank's dividend practices including any deficiencies noted.
7. Update the workpapers with the current Dividend Limitations worksheets and any information that will facilitate future examinations.

Review the bank's internal controls, policies, practices and procedures for paying dividends. The bank's system should be documented in a complete and concise manner and should include, where appropriate, narrative descriptions, flowcharts, copies of forms used and other pertinent information. Items marked with an asterisk require substantiation by observation or testing.

GENERAL

1. Does the bank employ the services of an independent dividend paying agent?

*2. Has the board of directors passed a resolution designating those officers who are authorized to sign dividend checks?

*3. Are unused dividend checks under dual control?

*4. Does the bank's system require separation of duties regarding custody, authorization, preparation, signing and distribution of dividend checks?

*5. Are dividend checks reconciled in detail before mailing?

*6. Is control maintained over the use of serially numbered dividend checks to ensure that they are issued sequentially?

CONCLUSION

1. Does the foregoing information provide an adequate basis for evaluating internal control? If significant deficiencies in areas not included in this questionnaire impair controls, indicate additional examination procedures deemed necessary.
2. Based on a composite evaluation, as evidenced by answers to the foregoing questions, is internal control considered adequate?

Employee benefit trusts are specialized trusts most commonly established to provide retirement benefits to employees. However, they may also be established for employee stock ownership or thrift purposes, or to provide medical, accident, and disability benefits. There are qualified and unqualified plans. Retirement plans are qualified under section 401 of the Internal Revenue Code (IRC), and employee benefit trusts are tax exempt under section 501(a) of the IRC. The major types of qualified plans are profit sharing, money purchase, stock bonus, employee stock ownership plans (ESOPS), 401(k) plans, and defined benefit pension plans.

Since 1974, state jurisdiction of employee benefit trusts and their administration has been largely preempted by a comprehensive scheme of federal laws and regulations under the Employee Retirement Income Security Act of 1974 (ERISA). ERISA is divided into four titles: Title I, ''Protection of Employee Benefit Rights,'' includes the fiduciary responsibility provisions (in part 4) that are interpreted and enforced by the U.S. Department of Labor (DOL). Title II, ''Amendments to the Internal Revenue Code Relating to Retirement Plans,'' is similar to Title I, but the Internal Revenue Service (IRS) is responsible for its enforcement. Title III, ''Jurisdiction, Administration, Enforcement,'' grants jurisdiction and powers for administration to various governmental units. Title IV, ''Plan Termination Insurance,'' establishes the Pension Benefit Guaranty Corporation (PBGC). The PBGC ensures that defined benefit plans have sufficient resources to provide minimum levels of benefits to participants. In addition to the PBGC, the primary agencies that have promulgated necessary regulations and interpretations pursuant to ERISA are the DOL and IRS. However, state and federal banking agencies also have a recognized role under this statute.

Numerous laws affecting employee benefit plans have been enacted since the adoption of ERISA; however, the most sweeping changes were imposed by the Tax Reform Act of 1986. These changes include (1) imposing numerous excise taxes on employers and employees for failure to meet new plan contribution and distribution rules, (2) lowering the maximum amount of contributions and benefits allowed under qualified defined contribution and defined benefit plans, (3) lowering the amount an individual can contribute to a 401(k) plan, and (4) providing new nondiscrimination rules covering plan contributions and distributions. Virtually all qualified plans had to be amended to comply with this law.

A specific statutory provision of ERISA mandates the exchange of information among federal agencies. Accordingly, the federal banking agencies have entered into an agreement with the DOL whereby a banking agency noting any possible ERISA violations that meet certain specific criteria will refer the matter to the DOL.

ERISA imposes very complex requirements on banks acting as trustees or in other fiduciary capacities for employee benefit trusts. Severe penalties can result from violations of statutory obligations. With respect to a bank's own employees' retirement plan, the bank (or ''plan sponsor''), regardless of whether it is named trustee, is still a ''party-in-interest'' pursuant to the statute. Therefore, unless a transaction qualifies for narrowly defined statutory exemptions (or unless it is the subject of a specific ''individual'' exemption granted by the DOL), any transaction involving the purchase or sale of an asset of the plan from or to the bank, any affiliate, officer, or employee could constitute a prohibited transaction under ERISA.

The current and projected costs of employee benefit plans should be analyzed for their impact on the expenses and overall financial condition of the bank. Excessive pension or profit-sharing benefits, large expense accounts, employment contracts, or bonuses for officers or directors (especially if they are also large shareholders) could prove detrimental and even lead to civil liability for the bank or its board.

Depending on the type of plan and the allocations of its fiduciary duties, certain reporting, disclosure, and plan design requirements are imposed on the plan sponsor and/or its designated supervising committee. Therefore, a bank should have appropriate expertise, policies, and procedures to properly administer the type of employee benefit accounts established for its employees.

If an examiner, as part of any examination assignment, detects possible prohibited transactions, self-dealing, or other questionable activities involving the bank's employee benefit plan, an appropriate investigation should be undertaken. Substantial conversions of existing defined benefit plans or plan assets into holdings of bank or affiliate stock, under certain circumstances,

could involve ERISA violations. An examiner should refer a complicated question arising out of any of these situations to the examiner-in-charge for resolution or submission to the Reserve Bank.

Part I of the following examination procedures (section 4080.3) should be completed for every commercial bank examination; part II should also be completed if the employee benefit plan is not trusteed by the bank or by an affiliate bank subject to supervision by a federal banking agency. Parts I and II may be completed by a trust specialist, if available. When a bank trust department is named as trustee, the examiner should determine whether compliance with ERISA was reviewed during the previous trust examination. If not, then part II should be completed.

1. To determine if the policies, practices, procedures, internal controls, and available expertise regarding employee benefit trusts are adequate.
2. To determine if bank officers are operating in conformance with the established guidelines.
3. To evaluate the impact of employee benefit plans and related benefits on the financial condition of the bank.
4. To determine compliance with laws, regulations, and instrument provisions.
5. To initiate corrective action when policies, practices, procedures, or internal controls are deficient or when violations of laws, regulations, or the governing instruments have been noted.

PART I

1. If selected for implementation, complete or update the Employee Benefit Trusts section of the Internal Controls Questionnaire.
2. Test for compliance with policies, practices, procedures and internal controls in conjunction with performing the remaining examination procedures. Also obtain a listing of any deficiencies noted in the latest review done by internal/external auditors from the examiner assigned ''Internal Control,'' and determine if appropriate corrections have been made.
3. Determine the approximate number, size and types of employee benefit plans held for the benefit of the bank's officers and employees.
4. Obtain plan instruments or amendments thereto (if any) and summarize key features for the work papers. As appropriate, add or update the following information:
   a. Date of adoption of new plan or amendment and brief summary of the plan or amendment.
   b. Parties or committees named trustee and (if different) person(s) responsible for making investment decisions.
   c. Individuals, committees or outside parties named as responsible for plan administration.
   d. Basic investment/funding characteristics (e.g., ''non-contributory profit-sharing, up to 100% in own BHC stock;'' ''contributory defined benefit pension plan, purchasing diversified securities,'' etc.).
   e. Latest Form 5500 (IRS) filed for plan (may be omitted if plan administrator is an affiliate bank or bank holding company).

   Example: First Bank established a non-contributory profit sharing trust in 1975 for all officers and employees. Latest amendment, as of December 31, 19XX, made technical alterations to the vesting and forfeiture provisions. The most recent available valuation of the trust's assets, dated June 30, 19XX, indicated total assets of $22,093,000 (market value). Assets were comprised of U.S. government securities (42%), listed stocks (53%) and cash equivalents. Bank of _____, as trustee, has sole investment responsibility.
5. If a plan is a defined benefit pension plan, ascertain the actuarily-determined amount of unfunded pension liability, if any, and the bank's arrangements for amortization. (Note: Unfunded pension liability represents a contingent liability per instructions for the Report of Condition.)
6. Determine if the current and projected costs of the employee benefit plan(s) is reasonable in light of the bank's financial condition.

Complete part II of these procedures, if applicable, then continue to step 7, below. Part II is to be completed when a plan for the bank's employees is administered by the bank or a bank committee and is not trusteed by the bank itself or an affiliate bank subject to supervision by a federal banking agency.

7. Determine whether any instances of possible violations of ERISA have been noted, and that as to each such instance, full information has been developed for current workpapers to support a referral to DOL pursuant to SR-81-697/TR-81-46.

   Note: While the final decision on whether or not to make a referral to the DOL is to be made by the Board's staff after receipt of the report of examination, complete information should always be obtained regarding possible ERISA violations in the event the decision is made to refer the matter. If gathering certain of the information would impose an undue burden upon the resources of the examiners or the bank, Board's staff (Trust Activities Program) should be consulted. Where a significant prohibited transaction such as self dealing has taken place, the bank should be clearly informed that it is expected to undertake all such corrective and/or remedial actions as are necessary under the circumstances. One measure would be for the bank to apply to the DOL for a retroactive exemption under ERISA section 408(a).
8. Reach a conclusion concerning:
   a. The adequacy of policies, practices and

procedures relating to employee benefit trusts.
   b. The manner in which bank officers are operating in conformance with established policy.
   c. The accuracy and completeness of any schedules obtained.
   d. Internal control deficiencies or exceptions.
   e. The quality of departmental management.
   f. Other matters of significance.
9. Prepare in appropriate report format, and discuss with appropriate officer(s):
   a. Violations of laws and regulations.
   b. Recommended corrective action when policies, practices or procedures are deficient.
10. Update the workpapers with any information that will facilitate future examinations.

PART II

1. Review plan asset listings, valuations, or printouts obtained for any instances of possible prohibited transactions (ERISA sections 406(a) and (b)). The listings should include holdings of:
   a. Loans.
   b. Leases.
   c. Real Estate.
   d. Employer stock or other securities or obligations.
   e. Own bank time deposits.
   f. Other assets which might constitute, or result from, prohibited transactions.
2. Review transaction(s)/holding(s) in the previous step for conformity to:
   a. ERISA provisions regarding employer securities or real estate (sections 407(a), (b) and (c)) and related regulations.
   b. Statutory exemptions of ERISA (section 408(b)).
   c. ''Exclusive benefit,'' prudence and diversification requirements of ERISA (sections 404(a) and (b)).

Employee Benefit Trusts
Internal Control Questionnaire
Effective date December 1985

Section 4080.4

Review the bank's internal controls, policies, practices and procedures for employee benefit accounts. The bank's system should be documented in a complete and concise manner and should include, where appropriate, narrative descriptions, flowcharts, copies of forms used and other pertinent information. Part I should be completed as part of every examination; both parts I and II should be completed whenever the plan, administered by the bank or a bank committee, is *not* trusteed by the bank itself or by an affiliate bank subject to supervision by a federal banking agency.

PART I

1. Are new employee benefit plans, significant amendments thereto, and related costs and features approved by the bank's board of directors?

*2. Does the institution obtain and maintain on file the following minimum documentation:
   a. The plan and the corporate resolution adopting it?
   b. IRS ''determination'' or ''opinion'' letter substantiating the tax-exempt status of the plan?
   c. The trust agreement and the corporate resolution appointing the trustee(s), if applicable? (On occasion, fully insured plans may have no named trustee.)
   d. Amendments to the plan or trust documents?

3. If the bank or a committee of its officers and employees acts as plan administrator for any plan(s), does it have internal procedures and/or has it arranged by contract for external administrative expertise sufficient to assure compliance with reporting, disclosure and other administrative requirements of ERISA and related regulations?
4. Have the bank, its officers, directors or employees, or any affiliate(s) entered into any transactions to buy or sell assets to the bank's employee benefit plan(s)?
5. Do plan investments conform to instrument investment provisions?

PART II

1. When exercising fiduciary responsibility in the purchase or retention of employer securities or employer real estate, does the bank have procedures to assure conformity with ERISA section 407 and related provisions?

   Note: The requirements of ERISA and the associated DOL regulation with respect to ''employer securities and employer real estate'' include:
   a. A plan may not acquire or hold any but ''qualifying employer securities and employer real estate.''
   b. A defined benefit plan may hold no more than 10 percent of the fair market value of its assets in qualifying employer securities and/or qualifying employer real property, except as provided by ERISA sections 407(a)(3) or 414(c)(1) and (2), and adopted regulations.
   c. Any dispositions of such property from a plan to a party-in-interest shall conform to ERISA sections 414(c)(3) and (5) and adopted regulations, but certain acquisitions and sales may be made pursuant to the section 408(a) exemption.
   d. The plan instrument, for an eligible individual account plan which is to hold in excess of 10 percent of the fair market value of its assets in qualifying employer securities or real property, shall provide explicitly the extent to which such plan may hold such assets. [ERISA sections 407(b)(1) and (d)(3)]

2. Does the bank have procedures to ensure conformance to the following statutory exemptions (and associated regulations) from the prohibited transactions provisions of ERISA:
   a. Loans made by the plan to parties-in-interest who are participants or beneficiaries? [ERISA section 408(b)(1)]
   b. Investment in deposits which bear a reasonable rate of interest of a bank which is a fiduciary of the plan? [ERISA section 408(b)(4)]

   Note: Other statutory exemptions which may on occasion be applicable are:
   c. Arrangements for office space or legal, accounting or other necessary services? [ERISA section 408(b)(2)]
   d. Loans to employee stock ownership trusts? [ERISA section 408(b)(3)]

e. Transactions between a plan and a collective trust fund maintained by a party-in-interest which is a bank or trust company? [section 408(b)(8)]
f. Providing of any ancillary service by a bank or trust company which is a fiduciary of the plan? [ERISA section 408(b)(6)]

3. If exercising or sharing fiduciary responsibility, does the bank have procedures designed:
a. To ensure that duties are executed for the exclusive benefit of plan participants and beneficiaries, in accordance with the ''prudent man'' standard? [ERISA sections 404(a)(1)(A) and (B)]
b. To ensure that investments are diversified, unless it is clearly prudent not to do so or otherwise excepted by other provisions of ERISA? [ERISA section 404(a)(1)(C)]

INTRODUCTION

Interest-rate risk (IRR) is the exposure of an institution's financial condition to adverse movements in interest rates. Accepting this risk is a normal part of banking and can be an important source of profitability and shareholder value. However, excessive levels of IRR can pose a significant threat to an institution's earnings and capital base. Accordingly, effective risk management that maintains IRR at prudent levels is essential to the safety and soundness of banking institutions.

Evaluating an institution's exposure to changes in interest rates is an important element of any full-scope examination and, for some institutions, may be the sole topic for specialized or targeted examinations. Such an evaluation includes assessing both the adequacy of the management process used to control IRR and the quantitative level of exposure. When assessing the IRR management process, examiners should ensure that appropriate policies, procedures, management information systems, and internal controls are in place to maintain IRR at prudent levels with consistency and continuity. Evaluating the quantitative level of IRR exposure requires examiners to assess the existing and potential future effects of changes in interest rates on an institution's financial condition, including its capital adequacy, earnings, liquidity, and, where appropriate, asset quality. To ensure that these assessments are both effective and efficient, examiner resources must be appropriately targeted at those elements of IRR that pose the greatest threat to the financial condition of an institution. This targeting requires an examination process built on a well-focused assessment of IRR exposure before the on-site engagement, a clearly defined examination scope, and a comprehensive program for following up on examination findings and ongoing monitoring. This section provides examiner guidance for assessing both the adequacy of an institution's IRR management process and the quantitative level of its IRR exposure. The section begins with a description of the sources and effects of IRR, followed by a discussion of sound practices for managing IRR. The section then outlines examination considerations in assessing the quantitative level of IRR exposure. Finally, the section discusses key elements of the examination process used to assess IRR including the role and importance of a preexamination risk assessment, proper scoping of the examination, and the testing and verification of both the management process and internal measures of the level of IRR exposure.[1]

SOURCES AND EFFECTS OF IRR

Sources of IRR

As financial intermediaries, banks encounter IRR in several ways. The primary and most discussed source of IRR is differences in the timing of the repricing of bank assets, liabilities, and off-balance-sheet (OBS) instruments. Repricing mismatches are fundamental to the business of banking and generally occur from either borrowing short-term to fund longer-term assets or borrowing long-term to fund shorter-term assets. Such mismatches can expose an institution to adverse changes in both the overall level of interest rates (parallel shifts in the yield curve) and the relative level of rates across the yield curve (nonparallel shifts in the yield curve).

Another important source of IRR, commonly referred to as basis risk, is the imperfect correlation in the adjustment of the rates earned and paid on different instruments with otherwise similar repricing characteristics (for example, a three-month Treasury bill versus a three-month LIBOR). When interest rates change, these differences can change the cash flows and earnings spread between assets, liabilities, and OBS instruments of similar maturities or repricing frequencies.

An additional and increasingly important source of IRR is the options in many bank asset, liability, and OBS portfolios. An option pro-

1. This section incorporates and builds on the principles and guidance provided in SR-96-13, "Interagency Guidance on Sound Practices for Managing Interest Rate Risk." It also incorporates, where appropriate, fundamental risk-management principles and supervisory policies and approaches identified in SR-93-69, "Examining Risk-Management and Internal Controls for Trading Activities of Banking Organizations"; SR-95-17, "Evaluating the Risk Management of Securities and Derivative Contracts Used in Nontrading Activities"; SR-95-22, "Enhanced Framework for Supervising the U.S. Operations of Foreign Banking Organizations"; SR-95-51, "Rating the Adequacy of Risk Management Processes and Internal Controls at State Member Banks and Bank Holding Companies"; and SR-96-14, "Risk-Focused Examinations and Inspections."

vides the holder with the right, but not the obligation, to buy, sell, or in some manner alter the cash flow of an instrument or financial contract. Options may be distinct instruments, such as exchange-traded and over-the-counter contracts, or they may be embedded within the contractual terms of other instruments. Examples of instruments with embedded options include bonds and notes with call or put provisions (e.g., callable U.S. agency notes), loans that give borrowers the right to prepay balances without penalty (e.g., residential mortgage loans), and various types of nonmaturity deposit instruments that give depositors the right to withdraw funds at any time without penalty (e.g., core deposits). If not adequately managed, the asymmetrical payoff characteristics of options can pose significant risk to the banking institutions that sell them. Generally, the options, both explicit and embedded, held by bank customers are exercised to the advantage of the holder, not the bank. Moreover, an increasing array of options can involve highly complex contract terms that may substantially magnify the effect of changing reference values on the value of the option and, thus, magnify the asymmetry of option payoffs.

Effects of IRR

Repricing mismatches, basis risk, options, and other aspects of a bank's holdings and activities can expose an institution's earnings and value to adverse changes in market interest rates. The effect of interest rates on accrual or *reported earnings* is the most common focal point. In assessing the effects of changing rates on earnings, most banks focus primarily on their net interest income—the difference between total interest income and total interest expense. However, as banks have expanded into new activities to generate new types of fee-based and other non-interest income, a focus on overall net income is becoming more appropriate. The non-interest income arising from many activities, such as loan servicing and various asset-securitization programs, can be highly sensitive to changes in market interest rates. As non-interest income becomes an increasingly important source of bank earnings, both bank management and supervisors need to take a broader view of the potential effects of changes in market interest rates on bank earnings.

Market interest rates also affect the *value* of a bank's assets, liabilities, and OBS instruments and, thus, have a direct effect on the value of an institution's equity capital. The effect of rates on the *economic value* of an institution's holdings and equity capital is a particularly important consideration for shareholders, management, and supervisors alike. The economic value of an instrument is an assessment of the present value of its expected net future cash flows, discounted to reflect market rates.[2] By extension, an institution's economic value of equity (EVE) can be viewed as the present value of the expected cash flows on assets minus the present value of the expected cash flows on liabilities plus the net present value of the expected cash flows on OBS instruments. Economic values, which may differ from reported book values due to GAAP accounting conventions, can provide a number of useful insights into the current and potential future financial condition of an institution. Economic values reflect one view of the ongoing worth of the institution and can often provide a basis for assessing past management decisions in light of current circumstances. Moreover, economic values can offer comprehensive insights into the potential future direction of earnings performance since changes in the economic value of an institution's equity reflect changes in the present value of the bank's future earnings arising from its current holdings.

Generally, commercial banking institutions have adequately managed their IRR exposures and few have failed solely as a result of adverse interest-rate movements. Nevertheless, changes in interest rates can have negative effects on bank profitability and must be carefully managed, especially given the rapid pace of financial innovation and the heightened level of competition among all types of financial institutions.

SOUND IRR MANAGEMENT PRACTICES

As is the case in managing other types of risk,

2. For some instruments, economic values may be the same as fair value—especially when prices from active markets are available. The fair value of an instrument is generally considered to be the amount at which the instrument could be exchanged in a current transaction between willing parties other than in a forced or liquidation sale. Even then, the economic values of instruments and firms may differ from fair values due to unique insights on the intrinsic value of instruments derived on a going-concern basis.

sound IRR management involves effective board and senior management oversight and a comprehensive risk-management process that includes the following elements:

- effective policies and procedures designed to control the nature and amount of IRR, including clearly defined IRR limits and lines of responsibility and authority
- appropriate risk-measurement, monitoring, and reporting systems
- systematic internal controls that include the internal or external review and/or audit of key elements of the risk-management process

The formality and sophistication used in managing IRR depends on the size and sophistication of the institution, the nature and complexity of its holdings and activities, and the overall level of its IRR. Adequate IRR management practices can vary considerably. For example, a small institution with noncomplex activities and holdings, a relatively short-term balance-sheet structure presenting a low IRR profile, and senior managers and directors who are actively involved in the details of day-to-day operations may be able to rely on relatively simple and informal IRR management systems.

More complex institutions and those with higher interest-rate risk exposures or holdings of complex instruments may require more elaborate and formal IRR management systems to address their broader and typically more complex range of financial activities, as well as provide senior managers and directors with the information they need to monitor and direct day-to-day activities. The more complex interest-rate risk management processes often employed at these institutions may require more formal internal controls, such as internal and external audits, to ensure the integrity of the information senior officials use to oversee compliance with policies and limits.

Individuals involved in the risk-management process should be sufficiently independent of business lines to ensure adequate separation of duties and avoid potential conflicts of interest. The degree of autonomy these individuals have may be a function of the size and complexity of the institution. In smaller and less complex institutions with limited resources, it may not be possible to completely remove individuals with business-line responsibilities from the risk-management process. In these cases, focus should be directed towards ensuring that risk-management functions are conducted effectively and objectively. Larger, more complex institutions may have separate and independent risk-management units.

Board and Senior Management Oversight

Effective oversight by a bank's board of directors and senior management is critical to a sound IRR management process. The board and senior management should be aware of their responsibilities related to IRR management, understand the nature and level of interest-rate risk taken by the bank, and ensure that the formality and sophistication of the risk-management process is appropriate for the overall level of risk.

Board of Directors

The board of directors has the ultimate responsibility for the level of IRR taken by the institution. The board should approve business strategies and significant policies that govern or influence the institution's interest-rate risk. It should articulate overall IRR objectives and should ensure the provision of clear guidance on the level of acceptable IRR.[3] The board should also approve policies and procedures that identify lines of authority and responsibility for managing IRR exposures.

Directors should understand the nature of the risks to their institution and ensure that management is identifying, measuring, monitoring, and controlling these risks. Accordingly, the board should monitor the performance and IRR profile of the institution and periodically review information that is timely and sufficiently detailed to allow directors to understand and assess the IRR facing the institution's key portfolios and the institution as a whole. The frequency of these reviews depends on the sophistication of the institution, the complexity of its holdings, and the materiality of changes in its holdings between reviews. Institutions holding significant positions in complex instruments or with significant changes in the composition of holdings would be expected to have more frequent reviews. In addition, the board should periodically review

3. For example, objectives for IRR could be set in terms of enhancement to income, liquidity, and value, while IRR limits could be expressed as acceptable levels of volatility in these same areas.

significant IRR management policies and procedures, as well as overall business strategies that affect the institution's IRR exposure.

The board of directors should encourage discussions between its members and senior management, as well as between senior management and others in the institution, regarding the institution's IRR exposures and management process. Board members need not have detailed technical knowledge of complex financial instruments, legal issues, or sophisticated risk-management techniques. However, they are responsible for ensuring that the institution has personnel available who have the necessary technical skills and that senior management fully understands the risks incurred by the institution and is sufficiently controlling them.

A bank's board of directors may meet its responsibilities in a variety of ways, including the identification of selected board members to become directly involved in risk-management activities by participating on board committees or by otherwise gaining a sufficient understanding and awareness of the institution's risk profile through periodic briefings and management reports. Information provided to board members should be presented in a format that members can readily understand and that will assist them in making informed policy decisions about acceptable levels of risk, the nature of risks in current and proposed new activities, and the adequacy of the institution's risk-management process. In short, regardless of the structure of the organization and the composition of its board of directors or delegated board committees, board members must ensure that the institution has the necessary technical skills and management expertise to conduct its activities prudently and consistently within the policies and intent of the board.

Senior Management

Senior management is responsible for ensuring that the institution has adequate policies and procedures for managing IRR on both a long-range and day-to-day basis and that it maintains clear lines of authority and responsibility for managing and controlling this risk. Management should develop and implement policies and procedures that translate the board's goals, objectives, and risk limits into operating standards that are well understood by bank personnel and that are consistent with the board's intent. Management is also responsible for maintaining (1) adequate systems and standards for measuring risk, (2) standards for valuing positions and measuring performance, (3) a comprehensive IRR reporting and monitoring process, and (4) effective internal controls and review processes.

IRR reports to senior management should provide aggregate information as well as sufficient supporting detail so that management can assess the sensitivity of the institution to changes in market conditions and other important risk factors. Senior management should also periodically review the organization's IRR management policies and procedures to ensure that they remain appropriate and sound. Senior management should also encourage and participate in discussions with members of the board and—when appropriate to the size and complexity of the institution—with risk-management staff regarding risk-measurement, reporting, and management procedures.

Management should ensure that analysis and risk-management activities related to IRR are conducted by competent staff whose technical knowledge and experience is consistent with the nature and scope of the institution's activities. The staff should have enough knowledgeable people to serve as backup to key personnel.

Policies, Procedures, and Limits

Institutions should have clear policies and procedures for limiting and controlling IRR. These policies and procedures should (1) delineate lines of responsibility and accountability over IRR management decisions, (2) clearly define authorized instruments and permissible hedging and position taking strategies, (3) identify the frequency and method for measuring and monitoring IRR, and (4) specify quantitative limits that define the acceptable level of risk for the institution. In addition, management should define the specific procedures and approvals necessary for exceptions to policies, limits, and authorizations. All IRR risk policies should be reviewed periodically and revised as needed.

Clear Lines of Authority

Whether through formal written policies or clear operating procedures, management should define

the structure of managerial responsibilities and oversight, including lines of authority and responsibility in the following areas:

- developing and implementing strategies and tactics used in managing IRR
- establishing and maintaining an IRR measurement and monitoring system
- identifying potential IRR and related issues arising from the potential use of new products
- developing IRR management policies, procedures and limits, and authorizing exceptions to policies and limits

Individuals and committees responsible for making decisions about interest-rate risk management should be clearly identified. Many medium-sized and large banks and banks with concentrations in complex instruments delegate responsibility for IRR management to a committee of senior managers, sometimes called an asset/liability committee (ALCO). In such institutions, policies should clearly identify ALCO membership, the committee's duties and responsibilities, the extent of its decision-making authority, and the form and frequency of its periodic reports to senior management and the board of directors. An ALCO should have sufficiently broad participation across major banking functions (for example, lending, investment, deposit, funding) to ensure that its decisions can be executed effectively throughout the institution. In many large institutions, the ALCO delegates day-to-day responsibilities for IRR management to an independent risk-management department or function.

Regardless of the level of organization and formality used to manage IRR, individuals involved in the risk-management process (including separate risk-management units, if present) should be sufficiently independent of the business lines to ensure adequate separation of duties and avoid potential conflicts of interest. Also, personnel charged with measuring and monitoring IRR should have a well-founded understanding of all aspects of the institution's IRR profile. Compensation policies for these individuals should be adequate enough to attract and retain personnel who are well qualified to assess the risks of the institution's activities.

Authorized Activities

Institutions should clearly identify the types of financial instruments that are permissible for managing IRR, either specifically or by their characteristics. As appropriate to its size and complexity, the institution should delineate procedures for acquiring specific instruments, managing individual portfolios, and controlling the institution's aggregate IRR exposure. Major hedging or risk-management initiatives should be approved by the board or its appropriate delegated committee before being implemented.

Before introducing new products, hedging, or position-taking initiatives, management should also ensure that adequate operational procedures and risk-control systems are in place. Proposals to undertake such new instruments or activities should contain these features:

- a description of the relevant product or activity
- an identification of the resources required to establish sound and effective IRR management of the product or activity
- an analysis of the risk of loss from the proposed activities in relation to the institution's overall financial condition and capital levels
- the procedures to be used to measure, monitor, and control the risks of the proposed product or activity

Limits

The goal of IRR management is to maintain an institution's interest-rate risk exposure within self-imposed parameters over a range of possible changes in interest rates. A system of IRR limits and risk-taking guidelines provides the means for achieving that goal. Such a system should set boundaries for the institution's level of IRR and, where appropriate, provide the capability to allocate these limits to individual portfolios or activities. Limit systems should also ensure that limit violations receive prompt management attention.

Aggregate IRR limits clearly articulating the amount of IRR acceptable to the firm should be approved by the board of directors and reevaluated periodically. Limits should be appropriate to the size, complexity, and financial condition of the organization. Depending on the nature of an institution's holdings and its general sophistication, limits can also be identified for individual business units, portfolios, instrument

types, or specific instruments.[4] The level of detail of risk limits should reflect the characteristics of the institution's holdings, including the various sources of IRR to which the institution is exposed. Limits applied to portfolio categories and individual instruments should be consistent with and complementary to consolidated limits.

IRR limits should be consistent with the institution's overall approach to measuring and managing IRR and should address the potential impact of changes in market interest rates on both reported earnings and the institution's economic value of equity (EVE). From an earnings perspective, institutions should explore limits on net income as well as net interest income to fully assess the contribution of non-interest income to the IRR exposure of the institution. Limits addressing the effect of changing interest rates on economic value may range from those focusing on the potential volatility of the value of the institution's major holdings to a comprehensive estimate of the exposure of the institution's EVE.

The limits for addressing the effect of rates on an institution's profitability and EVE should be appropriate for the size and complexity of its underlying positions. Relatively simple limits identifying maximum maturity/repricing gaps, acceptable maturity profiles, or the extent of volatile holdings may be adequate for institutions engaged in traditional banking activities and with few holdings of long-term instruments, options, instruments with embedded options, or other instruments whose value may be substantially affected by changes in market rates. For more complex institutions, quantitative limits on acceptable changes in its estimated earnings and EVE under specified scenarios may be more appropriate. Banks that have significant intermediate- and long-term mismatches or complex option positions should, at a minimum, have economic value–oriented limits that quantify and constrain the potential changes in economic value or bank capital that could arise from those positions.

Limits on the IRR exposure of earnings should be broadly consistent with those used to control the exposure of a bank's economic value. IRR limits on earnings variability primarily address the near-term recognition of the effects of changing interest rates on the institution's financial condition. IRR limits on economic value reflect efforts to control the effect of changes in market rates on the present value of the entire future earnings stream arising from the institution's current holdings.

IRR limits and risk tolerances may be keyed to specific scenarios of market-interest-rate movements, such as an increase or decrease of a particular magnitude. The rate movements used in developing these limits should represent meaningful stress situations, taking into account historic rate volatility and the time required for management to address exposures. Moreover, stress scenarios should take account of the range of the institution's IRR characteristics, including mismatch, basis, and option risks. Simple scenarios using parallel shifts in interest rates may be insufficient to identify these risks.

Increasingly, large, complex institutions are using advanced statistical techniques to measure IRR across a probability distribution of potential interest-rate movements and express limits in terms of statistical confidence intervals. If properly used, these techniques can be particularly useful in measuring and managing options positions.

Risk-Measurement and -Monitoring Systems

An effective process of measuring, monitoring, and reporting exposures is essential for adequately managing IRR. The sophistication and complexity of this process should be appropriate to the size, complexity, nature, and mix of an institution's business lines and its IRR characteristics.

IRR Measurement

Well-managed banks have IRR measurement systems that measure the effect of rate changes on both earnings and economic value. The latter is particularly important for institutions with significant holdings of intermediate and long-term instruments or instruments with embedded options because their market values can be particularly sensitive to changes in market interest rates. Institutions with significant non-interest income that is sensitive to changes in

4. Section 2020, "Acquisition and Management of Nontrading Securities and Derivative Products," discusses issues in setting price volatility limits in the acquisition of securities and derivatives.

interest rates should focus special attention on net income as well as net interest income. Since the value of instruments with intermediate and long maturities and embedded options is especially sensitive to interest-rate changes, banks with significant holdings of these instruments should be able to assess the potential longer-term impact of changes in interest rates on the value of these positions—the overall potential performance of the bank.

IRR measurement systems should (1) assess all material IRR associated with an institution's assets, liabilities, and OBS positions; (2) use generally accepted financial concepts and risk-measurement techniques; and (3) have well-documented assumptions and parameters. Material sources of IRR include the mismatch, basis, and option risk exposures of the institution. In many cases, the interest-rate characteristics of a bank's largest holdings will dominate its aggregate risk profile. While all of a bank's holdings should receive appropriate treatment, measurement systems should rigorously evaluate the major holdings and instruments whose values are especially sensitive to rate changes. Instruments with significant embedded or explicit option characteristics should receive special attention.

IRR measurement systems should use generally accepted financial measurement techniques and conventions to estimate the bank's exposure. Examiners should evaluate these systems in the context of the level of sophistication and complexity of the institution's holdings and activities. A number of accepted techniques are available for measuring the IRR exposure of both earnings and economic value. Their complexity ranges from simple calculations and static simulations using current holdings to highly sophisticated dynamic modeling techniques that reflect potential future business and business decisions. Basic IRR measurement techniques begin with a maturity/repricing schedule, which distributes assets, liabilities, and OBS holdings into time bands according to their final maturity (if fixed-rate) or time remaining to their next repricing (if floating). The choice of time bands may vary from bank to bank. Those assets and liabilities lacking contractual repricing intervals or maturities are assigned to repricing time bands according to the judgment and analysis of the institution.

Simple maturity/repricing schedules can be used to generate rough indicators of the IRR sensitivity of both earnings and economic values to changing interest rates. To evaluate earnings exposures, liabilities arrayed in each time band can be subtracted from the assets arrayed in the same time band to yield a dollar amount of maturity/repricing mismatch or gap in each time band. The sign and magnitude of the gaps in various time bands can be used to assess potential earnings volatility arising from changes in market interest rates.

A maturity/repricing schedule can also be used to evaluate the effects of changing rates on an institution's economic value. At the most basic level, mismatches or gaps in long-dated time bands can provide insights into the potential vulnerability of the economic value of relatively noncomplex institutions. Such long-term gap calculations along with simple maturity distributions of holdings may be sufficient for relatively noncomplex institutions. On a slightly more advanced, yet still simplistic, level, estimates of the change in an institution's economic value can be calculated by applying economic-value sensitivity weights to the asset and liability positions slotted in the time bands of a maturity/repricing schedule. The weights can be constructed to represent estimates of the change in value of the instruments maturing or repricing in that time band given a specified interest-rate scenario. When these weights are applied to the institution's assets, liabilities, and OBS positions and subsequently netted, the result can provide a rough approximation of the change in the institution's EVE under the assumed scenario. These measurement techniques can prove especially useful for institutions with small holdings of complex instruments.[5] Further refinements to simple risk weighting techniques can be achieved by incorporating the risk of options, the potential for basis risk, and non-parallel shifts in the yield curve using customized risk weights applied to the specific instruments or instrument types arrayed in the maturity repricing schedule.

Larger institutions and those with complex risk profiles that entail meaningful basis or option risks may find it difficult to monitor IRR adequately using simple maturity/repricing analyses. Generally, they will need to employ more

5. James V. Houpt and James A. Embersit, "A Method for Evaluating Interest Rate Risk in Commercial Banks," *Federal Reserve Bulletin*, vol. 77 (August 1991), 625–37 and David M. Wright and James V. Houpt, "An Analysis of Commercial Bank Exposure to Interest Rate Risk," *Federal Reserve Bulletin*, vol. 82 (February 1996), 115–128.

sophisticated simulation techniques. For assessing the exposure of earnings, simulations estimating cash flows and resulting earnings streams over a specific period are conducted based on existing holdings and assumed interest-rate scenarios. When these cash flows are simulated over the entire expected lives of the institution's holdings and discounted back to their present values, an estimate of the change in EVE can be calculated.

Static cash-flow simulations of current holdings can be made more dynamic by incorporating more detailed assumptions about the future course of interest rates and the expected changes in a bank's business activity over a specified time horizon. Combining assumptions on future activities and reinvestment strategies with information about current holdings, these simulations can project expected cash flows and estimate dynamic earnings and EVE outcomes. These more sophisticated techniques, such as option-adjusted pricing analysis and Monte Carlo simulation, allow for dynamic interaction of payment streams and interest rates to better capture the effect of embedded or explicit options.

The IRR measurement techniques and associated models should be sufficiently robust to adequately measure the risk profile of the institution's holdings. Depending on the size and sophistication of the institution and its activities, as well as the nature of its holdings, the IRR measurement system should have the capability to adequately reflect (1) uncertain principal amortization and prepayments; (2) caps and floors on loans and securities, where material; (3) the characteristics of both basic and complex OBS instruments held by the institution; and (4) changing spread relationships necessary to capture basis risk. Moreover, IRR models should provide clear reports that identify major assumptions and allow management to evaluate the reasonableness of and internal consistency among key assumptions.

Data Integrity and Assumptions

The usefulness of IRR measures depends on the integrity of the data on current holdings, validity of the underlying assumptions, and IRR scenarios used to model IRR exposures. Techniques involving sophisticated simulations should be used carefully so that they do not become "black boxes," producing numbers that appear to be precise, but that may be less accurate when their specific assumptions and parameters are revealed.

The integrity of data on current positions is an important component of the risk-measurement process. Institutions should ensure that current positions are delineated at an appropriate level of aggregation (for example, by instrument type, coupon rate, or repricing characteristic) to ensure that risk measures capture all meaningful types and sources of IRR, including those arising from explicit or embedded options. Management should also ensure that all material positions are represented in IRR measures, that the data used are accurate and meaningful, and that the data adequately reflect all relevant repricing and maturity characteristics. When applicable, data should include information on the contractual coupon rates and cash flows of associated instruments and contracts. Manual adjustments to underlying data should be well documented.

Senior management and risk managers should recognize the key assumptions used in IRR measurement, as well as reevaluate and approve them periodically. Assumptions should also be documented clearly and, ideally, the effect of alternative assumptions should be presented so that their significance can be fully understood. Assumptions used in assessing the interest-rate sensitivity of complex instruments, such as those with embedded options, and instruments with uncertain maturities, such as core deposits, should be subject to rigorous documentation and review, as appropriate to the size and sophistication of the institution. Assumptions about customer behavior and new business should take proper account of historical patterns and be consistent with the interest-rate scenarios used.

Nonmaturity Deposits

An institution's IRR measurement system should consider the sensitivity of nonmaturity deposits, including demand deposits, NOW accounts, savings deposits, and money market deposit accounts. Nonmaturity deposits represent a large portion of the industry's funding base, and a variety of techniques are used to analyze their IRR characteristics. The use of these techniques should be appropriate to the size, sophistication, and complexity of the institution.

In general, treatment of nonmaturity deposits should consider the historical behavior of the institution's deposits; general conditions in the institution's markets, including the degree of

competition it faces; and anticipated pricing behavior under the scenario investigated. Assumptions should be supported to the fullest extent practicable. Treatment of nonmaturity deposits within the measurement system may, of course, change from time to time based on market and economic conditions. Such changes should be well founded and documented. Treatments used in constructing earnings simulation assessments should be conceptually and empirically consistent with those used in developing EVE assessments of IRR.

IRR Scenarios

IRR exposure estimates, whether linked to earnings or economic value, use some form of forecasts or scenarios of possible changes in market interest rates. Bank management should ensure that IRR is measured over a probable range of potential interest-rate changes, including meaningful stress situations. The scenarios used should be large enough to expose all of the meaningful sources of IRR associated with an institution's holdings. In developing appropriate scenarios, bank management should consider the current level and term structure of rates and possible changes to that environment, given the historical and expected future volatility of market rates. At a minimum, scenarios should include an instantaneous plus or minus 200 basis point parallel shift in market rates.[6] Institutions should also consider the use of multiple scenarios, including the potential effects of changes in the relationships among interest rates (option risk and basis risk) as well as changes in the general level of interest rates and changes in the shape of the yield curve.

The risk-measurement system should support a meaningful evaluation of the effect of stressful market conditions on the institution. Stress-testing should be designed to provide information on the kinds of conditions under which the institution's strategies or positions would be most vulnerable; thus, testing may be tailored to the risk characteristics of the institution. Possible stress scenarios might include abrupt changes in the term structure of interest rates, relationships among key market rates (basis risk), liquidity of key financial markets, or volatility of market rates. In addition, stress scenarios should include conditions under which key business assumptions and parameters break down. The stress-testing of assumptions used for illiquid instruments and instruments with uncertain contractual maturities, such as core deposits, is particularly critical to achieving an understanding of the institution's risk profile. Therefore, stress scenarios may not only include extremes of observed market conditions but also plausible worst-case scenarios.

Management and the board of directors should periodically review the results of stress tests and the appropriateness of key underlying assumptions. Stress-testing should be supported by appropriate contingency plans.

IRR Monitoring and Reporting

An accurate, informative, and timely management information system is essential for managing IRR exposure, both to inform management and support compliance with board policy. Reporting of risk measures should be regular and clearly compare current exposure with policy limits. In addition, past forecasts or risk estimates should be compared with actual results as one tool to identify any potential shortcomings in modeling techniques.

A bank's senior management and its board or a board committee should receive reports on the bank's IRR profile at least quarterly. More frequent reporting may be appropriate depending on the bank's level of risk and its potential for significant change. While the types of reports prepared for the board and for various levels of

6. Analysis of quarterly and annual data on changes of the Constant Maturities Treasury Securities (CMT) over the period of January 1, 1974, to December 31, 1994, suggests that a 200 basis point parallel shift in the yield curve represents a plausible stress scenario for assessing IRR. The following data illustrate that over the past 17 years, quarterly changes in yields on CMTs exceeded 193 bp for the three-month CMT and 137 bp for the 30-year CMT 1 percent of the time. Data on annual yield changes illustrate that yield changes on CMTs exceeded 194 bp 5 percent of the time and exceeded 151 bp 10 percent of the time.

Changes in Yields of Constant Maturities Treasury Securities

	Quarterly changes	*Annual changes*	
	99% confidence level	*95% confidence level*	*90% confidence level*
	Basis Point Change		
3-mo. CMT	193 bp	274 bp	212 bp
1-yr. CMT	191 bp	271 bp	210 bp
2-yr. CMT	180 bp	255 bp	198 bp
3-yr. CMT	175 bp	248 bp	192 bp
5-yr. CMT	166 bp	235 bp	182 bp
7-yr. CMT	161 bp	228 bp	177 bp
10-yr. CMT	152 bp	216 bp	167 bp
30-yr. CMT	137 bp	194 bp	151 bp

management will vary based on the institution's IRR profile, they should, at a minimum, allow senior management and the board or committee to—

- evaluate the level of and trends in the bank's aggregate IRR exposure;
- demonstrate and verify compliance with all policies and limits;
- evaluate the sensitivity and reasonableness of key assumptions;
- assess the results and future implications of major hedging or position-taking initiatives that have been taken or are being actively considered;
- understand the implications of various stress scenarios, including those involving breakdowns of key assumptions and parameters;
- review IRR policies, procedures, and the adequacy of the IRR measurement systems; and
- determine whether the bank holds sufficient capital for the level of risk being taken.

Comprehensive Internal Controls

An institution's IRR management process should be an extension of its overall structure of internal controls. Properly structured, a system of internal controls should promote effective and efficient operations; reliable financial and regulatory reporting; and compliance with relevant laws, regulations, and institutional policies. In determining whether internal controls meet these objectives, examiners should consider the general control environment of the organization; the process for identifying, analyzing, and managing IRR; the adequacy of management information systems; and adherence to control activities such as approvals, confirmations, and reconciliations.

An important element of an institution's internal controls for IRR is management's comprehensive evaluation and review of the various components of the IRR management process. Although procedures for establishing limits and adhering to them may vary among institutions, periodic reviews should be conducted to determine whether the organization enforces its IRR policies and procedures. Positions that exceed established limits should receive the prompt attention of appropriate management and should be resolved according to the process described in approved policies. Periodic reviews of the IRR management process should also be conducted in light of significant changes in the nature of instruments acquired, risk-measurement methodologies, limits, and internal controls that have occurred since the last review.

Reviews of the accuracy and performance of the IRR measurement system should also be conducted and include assessments of the assumptions, parameters, and methodologies used in the institution's IRR measurement system. During a review, examiners should seek to understand, test, and document the current measurement process; evaluate the system's accuracy; and recommend solutions to any identified weaknesses. The results of this review, along with any recommendations for improvement, should be reported to the board and acted upon in a timely manner. Institutions with complex risk exposure are encouraged to have their measurement systems reviewed by external auditors or other knowledgeable outside parties to ensure their adequacy and integrity. Since measurement systems may incorporate one or more subsidiary systems or processes, institutions should ensure that multiple component systems are well integrated and consistent in all critical respects.

The frequency and extent to which an institution should reevaluate its risk-measurement methodologies and models depends, in part, on the specific IRR exposures created by their holdings and activities, the pace and nature of changes in market interest rates, and the extent to which there are new developments in measuring and managing IRR. At a minimum, institutions should review their underlying IRR measurement methodologies and IRR management process annually, and more frequently as market conditions dictate. In many cases, internal evaluations may be supplemented by reviews of external auditors or other qualified outside parties, such as consultants with expertise in IRR management.

Rating the Adequacy of IRR Management

Examiners should incorporate their assessment of the adequacy of IRR management into their overall rating of risk management, which is subsequently factored into the management component of an institution's CAMELS rating. Rat-

ings of IRR management can follow the general framework used to rate overall risk management:

- A rating of 1 or strong would indicate that management effectively identifies and controls the IRR posed by the institution's activities, including those from new products.
- A rating of 2 or satisfactory would indicate that the institution's management of IRR is largely effective, but lacking in some modest degree. It reflects a responsiveness and ability to cope successfully with existing and foreseeable exposures that may arise in carrying out the institution's business plan. While the institution may have some minor risk-management weaknesses, these problems have been recognized and are being addressed. Generally, risks are being controlled in a manner that does not require additional or more than normal supervisory attention.
- A rating of 3 or fair signifies IRR management practices that are lacking in some important ways and, therefore, are a cause for more than normal supervisory attention. One or more of the four elements of sound IRR management are considered fair and have precluded the institution from fully addressing a significant risk to its operations. Certain risk-management practices are in need of improvement to ensure that management and the board are able to identify, monitor, and control adequately all significant risks to the institution.
- A rating of 4 or marginal represents marginal IRR management practices that generally fail to identify, monitor, and control significant risk exposures in many material respects. Generally, such a situation reflects a lack of adequate guidance and supervision by management and the board. One or more of the four elements of sound risk management are considered marginal and require immediate and concerted corrective action by the board and management.
- A rating of 5 or unsatisfactory indicates a critical absence of effective risk-management practices to identify, monitor, or control significant risk exposures. One or more of the four elements of sound risk management is considered wholly deficient, and management and the board have not demonstrated the capability to address deficiencies. Deficiencies in the institution's risk-management procedures and internal controls require immediate and close supervisory attention.

QUANTITATIVE LEVEL OF IRR EXPOSURE

Evaluating the quantitative level of IRR involves assessing the effects of both past and potential future changes in interest rates on an institution's financial condition, including the effects on its earnings, capital adequacy, liquidity, and, in some cases, asset quality. This assessment involves a broad analysis of an institution's business mix, balance-sheet composition, OBS holdings, and holdings of interest rate–sensitive instruments. Characteristics of the institution's material holdings should also be investigated to determine (and quantify) how changes in interest rates might affect its performance. The rigor of this evaluation process should reflect the size, sophistication, and nature of the institution's holdings.

Assessment of the Composition of Holdings

An overall evaluation of an institution's holdings and its business mix is an important first step in evaluating the quantitative level of IRR exposure. The evaluation should focus on identifying (1) major on- and off-balance-sheet positions, (2) concentrations in interest-sensitive instruments, (3) the existence of highly volatile instruments, and (4) significant sources of noninterest income that may be sensitive to changes in interest rates. Identifying major holdings of particular types or classes of assets, liabilities, or off-balance-sheet instruments is particularly pertinent since the interest rate–sensitivity characteristics of an institution's largest positions or activities will tend to dominate its IRR profile. The composition of assets should be assessed to determine the types of instruments held and the relative proportion of holdings they represent, both with respect to total assets and within appropriate instrument portfolios. Examiners should note any specialization or concentration in particular types of investment securities or lending activities and identify the interest-rate characteristics of the instruments or activities. The assessment should also incorporate an evaluation of funding strategies and the composition of deposits, including core deposits. Trends and changes in the composition of assets, liabilities, and off-balance-sheet holdings should be fully assessed—especially

when the institution is experiencing significant growth.

Examiners should identify the interest sensitivity of an institution's major holdings. For many instruments, the stated final maturity, coupon interest payment, and repricing frequency are the primary determinants of their interest-rate sensitivity. In general, the shorter the repricing frequency, or maturity for fixed-rate instruments, the greater the impact of a change in rates on the *earnings* of the asset, liability, or OBS instrument employed will be because the cash flows derived, either through repricing or reinvestment, will more quickly reflect market rates. Conversely, the longer the repricing frequency, or maturity for fixed-rate instruments, the more sensitive the *value* of the instrument will be to changes in market interest rates. Accordingly, basic maturity/repricing distributions and gap schedules are important first screens in identifying the interest sensitivity of major holdings from both an earnings and value standpoint.

Efforts should also be made to identify instruments whose value is highly sensitive to rate changes. Even if they do not represent a major position, the rate sensitivity of these holdings may be large enough to have a material effect on the institution's aggregate exposure. Highly interest rate–sensitive instruments generally have fixed-rate coupons with long maturities, significant embedded options, or some elements of both. Identifying explicit options and instruments with embedded options is particularly important. Because of their asymmetrical cash flows under varying scenarios, these holdings may exhibit significantly volatile price and earnings behavior in changing-rate environments. The interest-rate sensitivity of exchange-traded options is usually readily identified due to the standardization of exchange contracts. On the other hand, the interest-rate sensitivity of over-the-counter derivative instruments and the option provisions embedded in other financial instruments, such as the right to prepay a loan without penalty, may be less readily identifiable. Instruments tied to residential mortgages, such as mortgage pass-through securities, collateralized mortgage obligations (CMOs), real estate mortgage investment conduits (REMICs), and various mortgage-derivative products, generally entail some form of embedded optionality. Certain types of CMOs and REMICs constitute high-risk mortgage-derivative products and should be clearly identified. U.S. agency and municipal securities, as well as traditional forms of lending and borrowing arrangements, can often incorporate options into their structures. U.S. agency structured notes and municipal securities with long-dated call provisions are just two examples. Many commercial loans also make use of caps or floors. Over-the-counter OBS instruments, such as swaps, caps, floors, and collars, can involve highly complex structures and, thus, can be quite volatile in the face of changing interest rates.

An evaluation of an institution's funding sources relative to the profile of its assets is fundamental to the assessment of IRR. Reliance on volatile or complex funding structures can significantly increase IRR when asset structures are fixed-rate or long-term in nature. Conversely, long-term liabilities financing shorter-term assets can also increase IRR. The role of nonmaturity or core deposits in an institution's funding base is particularly pertinent to any assessment of IRR. Depending on their composition and the underlying client base, core deposits can provide significant opportunities for institutions to administer and manage the interest rates paid on this funding source. Thus, high levels of stable core deposit funding may provide an institution with significant control over its IRR profile. Examiners should assess the characteristics of an institution's nonmaturity deposit base, including the types of accounts offered, the underlying customer base, and important trends that may influence the rate sensitivity of this funding source.

In general, examiners should evaluate trends and attempt to identify any structural changes in the interest-rate risk profile of an institution's holdings, such as shifts of asset holdings into longer-term instruments or instruments that may have embedded options, changes in funding strategies and core deposit balances, and the use of off-balance-sheet instruments. Significant changes in the composition of an institution's holdings may reduce the usefulness of historical performance as an indicator of future performance.

Examiners should also identify and assess material sources of interest-sensitive fee income. Loan-servicing income, especially when related to residential mortgages, can be an important and highly volatile element in an institution's earnings profile. Servicing income is linked to the size of the servicing portfolio and, thus, can be greatly affected by the rate of prepayment on mortgages in the servicing portfolio. Revenues

arising from securitization of other types of loans, including credit card receivables, can also be very sensitive to changes in interest rates.

An analysis of both on- and off-balance-sheet holdings should also consider potential basis risk, that is, whether instruments with adjustable-rate characteristics that reprice in a similar time period will reprice differently than assumed. Consideration of basis risk is particularly pertinent when offsetting positions reprice in the same time period. Typical examples include assets that reprice with three-month Treasury bills paired against liabilities repricing with three-month LIBOR or prime-based assets paired against other short-term funding sources. Analyzing the repricing characteristics of major adjustable-rate positions should help to identify such situations.

Exposure of Earnings to IRR

When evaluating the potential effects of changing rates on an institution's earnings, examiners should assess the key determinants of the net interest margin, the effect that fluctuations in net interest margins can have on overall net income, and the rate sensitivity of non-interest income and expense. Analyzing the historical behavior of the net interest margin, including the yields on major assets, liabilities, and off-balance-sheet positions that make up that margin, can provide useful insights into the relative stability of an institution's earnings. For example, a review of the historical composition of assets and the yields earned on those assets clearly identifies an institution's business mix and revenue-generating strategies and reveals important insights into the potential vulnerabilities of these revenues to changes in rates. Similarly, an assessment of the rates paid on various types of deposits over time can help identify the institution's funding strategies, how the institution competes for deposits, and the potential vulnerability of its funding base to rate changes.

Understanding the effect of potential fluctuations in net interest income on overall operating performance is also important. High overhead structures at some banks may require high net interest margins to generate even moderate levels of income. Accordingly, relatively high net interest margins may not necessarily imply a higher tolerance to changes in interest rates. Examiners should fully consider the potential effects of fluctuating net interest margins when analyzing the exposure of net income to changes in interest rates.

Additionally, examiners should assess the contribution of non-interest income to net income, including its interest-rate sensitivity and how it affects the IRR of the institution. Significant sources of rate-insensitive non-interest income provide stability to net income and can mitigate the effect of fluctuations in net interest margins.

A historical review of changes in an institution's earnings—both net income and net interest income—in relation to changes in market rates is an important step in assessing the rate sensitivity of its earnings. When appropriate, this review should assess the institution's performance during prior periods of volatile rates.

Important tools used to gauge the potential volatility in future earnings include basic maturity and repricing gap calculations and income simulations. Short-term repricing gaps between assets and liabilities in intervals of one year or less can provide useful insights on the exposure of earnings. These can be used to develop rough approximations of the effect of changes in market rates on an institution's profitability. Examiners can develop rough gap estimates using available call report information, as well as the bank's own internally generated gap or other earnings exposure calculations if risk-management and -measurement systems are deemed adequate. When available, a bank's own earnings-simulation model provides a particularly valuable source of information: a formal estimate of future earnings (a ''baseline'') and an evaluation of how earnings would change under different rate scenarios. Together with historical earnings patterns, an institution's estimate of the IRR sensitivity of its earnings derived from simulation models is an important indication of the exposure of its near-term earnings stability.

As detailed in the preceding subsection, sound risk-management practices require IRR to be measured over a probable range of potential interest-rate changes. At a minimum, an instantaneous shift in the yield curve of plus or minus 200 basis points should be used to assess the potential impact of rate changes on an institution's earnings.

Examiners should evaluate the exposure of earnings to changes in interest rates relative to the institution's overall level of earnings and the potential length of time such exposure might

persist. For example, simulation estimates of a small, temporary decline in earnings, while likely an issue for shareholders and directors, may be less of a supervisory concern if the institution has a sound earnings and capital base. On the other hand, exposures that could offset earnings for a significant period (as some thrifts experienced during the 1980s) and even deplete capital would be a great concern to both management and supervisors. Exposures measured by gap or simulation analysis under the minimum 200 basis point scenario that would result in a significant decline in net interest margins or net income should prompt further investigation of the adequacy and stability of earnings and the adequacy of the institution's risk-management process. Specifically, in institutions exhibiting significant earnings exposures, examiners should emphasize the results of the institution's stress tests to determine the extent to which more significant and stressful rate moves might magnify the erosion in earnings identified in the more modest rate scenario. In addition, examiners should emphasize the need for management to understand the magnitude and nature of the institution's IRR and the adequacy of its limits.

While an erosion in net interest margins or net income of more than 25 percent under a 200 basis point scenario should warrant considerable examiner attention, examiners should take into account the absolute level of an institution's earnings both before and after the estimated IRR shock. For example, a 33 percent decline in earnings for a bank with a strong return on assets (ROA) of 1.50 percent would still leave the bank with an ROA of 1.00 percent. In contrast, the same percentage decline in earnings for a bank with a fair ROA of 0.75 percent results in a marginal ROA of 0.50 percent.

Examiners should ensure that their evaluation of the IRR exposure of earnings is incorporated into the rating of earnings under the CAMELS rating system. Institutions receiving an earnings rating of 1 or 2 would typically have minimal exposure to changing interest rates. Conversely, significant exposure of earnings to changes in rates may, in itself, provide a sufficient basis for a lower rating.

Exposure of Capital and Economic Value

As set forth in the capital adequacy guidelines for state member banks, the risk-based capital ratio focuses principally on broad categories of credit risk and does not incorporate other factors, including overall interest-rate exposure and management's ability to monitor and control financial and operating risks. Therefore, the guidelines point out that in addition to evaluating capital ratios, an overall assessment of capital adequacy must take account of " . . . a bank's exposure to declines in economic value of its capital due to changes in interest rates. For this reason, the final supervisory judgement on a bank's capital adequacy may differ significantly from conclusions that might be drawn solely from the level of its risk-based capital ratio."

Banking organizations with low proportions of assets maturing or repricing beyond five years, relatively few assets with volatile market values (such as high-risk CMOs and structured notes or certain off-balance-sheet derivatives), and large and stable sources of nonmaturity deposits are unlikely to face significant economic value exposure. Consequently, an evaluation of their economic value exposure may be limited to reviewing available internal reports showing the asset/liability composition of the institution or the results of internal-gap, earnings-simulation, or economic-value simulation models to confirm that conclusion.

Institutions with fairly significant holdings of longer maturing or repricing assets, concentrations in value-sensitive on- and off-balance-sheet instruments, or a weak base of nonmaturity deposits warrant more formal and quantitative evaluations of economic-value exposures. This includes reviewing the results of the bank's own internal reports for measuring changes in economic value, which should address the adequacy of the institution's risk-management process, reliability of risk-measurement assumptions, integrity of the data, and comprehensiveness of any modeling procedures.

For institutions that appear to have a potentially significant level of IRR and that lack a reliable internal economic-value model, examiners should consider alternative means for quantifying economic-value exposure, such as internal-gap measures or off-site monitoring or surveillance screens that rely on call report data to estimate economic-value exposure. For example, the institution's gap schedules might be used to derive a duration gap by applying duration-based risk weights to the bank's aggregate positions. In estimating changes in economic value using alternative means, the relative

crudeness of these techniques and lack of detailed data (such as the absence of coupon or off-balance-sheet data) should be taken into account when drawing conclusions about the institution's exposure and capital adequacy.

An evaluation of an institution's capital adequacy should also consider the extent to which past interest-rate moves may have reduced the economic value of capital through the accumulation of net unrealized losses on financial instruments. To the extent that past rate moves have reduced the economic or market value of a bank's claims more than they have reduced the value of its obligations, the institution's economic value of capital is less than its stated book value.

To evaluate the embedded net loss or gain in an institution's financial structure, fair-value data on the securities portfolio can be used as the starting point; this information should be readily available from the call report or bank internal reports. Other major asset categories that might contain material embedded gains or losses include any assets maturing or repricing in more than five years, such as residential, multifamily, or commercial mortgage loans. By comparing a portfolio's weighted average coupon with current market yields, examiners may get an indication of the magnitude of any potential unrealized gains or losses. For companies with hedging strategies that use derivatives, the current positive or negative market value of these positions should be obtained, if available. For banks with material holdings of originated or purchased mortgage-servicing rights, capitalized amounts should be evaluated to ascertain that they are recorded at the lower of cost or fair value and that management has appropriately written down any values that are impaired pursuant to generally accepted accounting rules.

The presence of significant depreciation in securities, loans, or other assets does not necessarily indicate significant embedded net losses; depreciation may be offset by a decline in the market value of a bank's liabilities. For example, stable, low-cost nonmaturity deposits typically become more profitable to banks as rates rise, and they can add significantly to the bank's financial strength. Similarly, below-market-rate deposits, other borrowings, and subordinated debt may also offset unrealized asset losses caused by past rate hikes.

For banks with substantial depreciation in their securities portfolios, low levels of nonmaturity deposits and retail time deposits, or high levels of IRR exposure, unrealized losses can have important implications for the supervisory assessment of capital adequacy. If stressful conditions require the liquidation or restructuring of the securities portfolio, economic losses could be realized and, thereby, reduce the institution's regulatory capitalization. Therefore, for higher-risk institutions, an evaluation of capital adequacy should consider the potential after-tax effect of the liquidation of available-for-sale and held-to-maturity accounts. Estimates of the effect of securities losses on regulatory capital ratio may be obtained from surveillance screens that use call report data or the bank's internal reports.

Examiners should also consider the potential effect of declines and fluctuations in earnings on an institution's capital adequacy. Using the results of internal model simulations or gap reports, examiners should determine whether capital-impairing losses might result from changes in market interest rates. In cases where potential rate changes are estimated to cause declines in margins that actually result in losses, examiners should assess the effect on capital over a two- or three-year earnings horizon.

When rating capital adequacy in the context of IRR exposure, examiners should consider the effect of changes in market interest rates on the economic value of equity, level of embedded losses in the bank's financial structure, and impact of potential rate changes on the institution's earnings. The IRR of institutions that show material declines in earnings or economic value of capital from a 200 basis point shift should be evaluated fully, especially if that decline would lower an institution's pro forma prompt-corrective-action category. For example, a well-capitalized institution with a 5.5 percent leverage ratio and an estimated change in economic value arising from an appropriate stress scenario amounting to 2.0 percent of assets would have an adjusted leverage ratio of 3.5 percent, causing a pro forma two-tier decline in its prompt-corrective-action category to the undercapitalized category. After considering the level of embedded losses in the balance sheet, the stability of the institution's funding base, its exposure to near-term losses, and the quality of its risk-management process, the examiner may need to give the institution's capital adequacy a relatively low rating. In general, sufficiently adverse effects of market-rate shocks or weak management and control procedures can provide a basis for lowering a bank's rating of capital adequacy. Moreover,

even less severe exposures could contribute to a lower rating if combined with exposures from asset concentrations, weak operating controls, or other areas of concern.

Examination Process for Evaluating IRR

As the primary market risk most banks face, IRR should usually receive consideration in full-scope exams. It may also be the topic of targeted examinations. To meet examination objectives efficiently and effectively while remaining sensitive to potential burdens imposed on institutions, the examination of IRR should follow a structured, *risk-focused approach*. Key elements of a risk-focused approach to the examination process for IRR include (1) off-site monitoring and risk assessment of an institution's IRR profile and (2) appropriate planning and scoping of the on-site examination to ensure that it is as efficient and productive as possible. A fundamental tenet of this approach is that supervisory resources are targeted at functions, activities, and holdings that pose the most risk to the safety and soundness of an institution. Accordingly, institutions with low levels of IRR would be expected to receive relatively less supervisory attention than those with more severe IRR exposures.

Many banks have become especially skilled in managing and limiting the exposure of their earnings to changes in interest rates. Accordingly, for most banks and especially for smaller institutions with less complex holdings, the IRR element of the examination may be relatively simple and straightforward. On the other hand, some banks consider IRR an intended consequence of their business strategies and choose to take and manage that risk explicitly—often with complex financial instruments. These banks, along with banks that have a wide array of activities or complex holdings, generally should receive greater supervisory attention.

Off-Site Risk Assessment

Off-site monitoring and analysis involves developing a preliminary view or "risk assessment" before initiating an on-site examination. Both the level of IRR exposure and quality of IRR management should be assessed to the fullest extent possible during the off-site phase of the examination process. The following information can be helpful in this assessment:

- organizational charts and policies identifying authorities and responsibilities for managing IRR
- IRR policies, procedures, and limits
- ALCO committee minutes and reports (from six to twelve months before the examination)
- board of director reports on IRR exposures
- audit reports (both internal and external)
- position reports, including those for investment securities and off-balance-sheet instruments
- other available bank-internal-risk reports, including those detailing key assumptions
- reports outlining key characteristics of concentrations and material holdings of interest-sensitive instruments
- documentation for inputs, assumptions, and methodologies used in measuring risk
- Federal Reserve surveillance reports and supervisory screens

Quantitative IRR exposure can be assessed off-site by conducting as much of the analysis summarized in this subsection as is practicable. This includes assessments of the bank's overall balance-sheet composition and holdings of interest-sensitive instruments. An assessment of the exposure of earnings can be accomplished using supervisory screens, examiner-constructed measures, and internal bank measures obtained from management reports received before the on-site engagement. Similar assessments can be made on the exposure of capital or economic value.

An off-site review of the quality of the risk-management process can significantly improve the efficiency of the on-site engagement. The key to assessing the quality of management is an organized discovery process aimed at determining whether appropriate policies, procedures, limits, reporting systems, and internal controls are in place. This discovery process should, in particular, ascertain whether all the elements of a sound IRR management policy are applied consistently to material concentrations of interest-sensitive instruments. The results and reports of prior examinations provide important information about the adequacy of risk management.

Examination Scope

The off-site risk assessment is an informed hypothesis of both the adequacy of IRR management and the magnitude of the institution's exposure. The scope of the on-site examination of IRR should be designed to confirm or reject that hypothesis and should target specific areas of interest or concern. In this way, examination procedures are tailored to the activities and risk profile of the institution and use flexible and targeted work-documentation programs for the on-site examination. Confirmation of hypotheses on the adequacy of the IRR management process is especially important. In general, if IRR management is identified as adequate, examiners can rely more heavily on the bank's internal IRR measures for assessing quantitative exposures.

The examination scope for assessing IRR should be commensurate with the complexity of the institution and consistent with the off-site risk assessment. For example, only baseline examination procedures would be used for institutions whose off-site risk assessment indicates that they have adequate IRR management processes and low levels of quantitative exposure. Such institutions would include those with noncomplex balance-sheet structures that meet the following criteria:

- Asset structures are principally short-term. Long-term assets constitute less than 25 percent of total assets and the combination of long-term assets and 30 percent of intermediate-term assets constitute less than 30 percent of assets. Long-term assets are considered those that have maturity or repricing intervals greater than five years, and intermediate-term assets are defined as those that have maturity or repricing intervals between one and five years.
- High-risk mortgage securities are less than 5 percent of total assets.
- Structured notes are less than 5 percent of total assets.
- There are no off-balance-sheet positions.
- The capital base is strong, and the institution has a history of stable earnings.

For these and other institutions identified as potentially low risk, the scope of the on-site examination would consist of only those examination procedures necessary to confirm the risk-assessment hypothesis. The adequacy of IRR management could be confirmed through a basic review of the appropriateness of policies, internal reports, and controls and the institution's adherence to them. The integrity and reliability of the information used to assess the quantitative level of risk could be confirmed through limited sampling and testing. In general, if the risk assessment is confirmed by basic examination procedures, the examiner may conclude the IRR examination process.

Institutions assessed to have high levels of IRR exposure and strong IRR management may require more extensive examination scopes to confirm the risk assessment. These procedures may entail more analysis of the institution's IRR measurement system and the IRR characteristics of major holdings. Where high quantitative levels of exposure are found, examiners should focus special attention on the sources of this risk and on significant concentrations of interest-sensitive instruments. Institutions assessed to have high exposure and weak risk-management systems would require an extensive work-documentation program. Internal measures should be used cautiously, if at all.

Regardless of the size or complexity of an institution, care must be taken during the on-site phase of the examination to ensure confirmation of the risk assessment and identification of issues that may have escaped off-site analysis. Accordingly, the examination scope should be adjusted as on-site findings dictate.

Assessing CAMELS Ratings

For most institutions, interest-rate risk is their primary market-risk exposure. Accordingly, the CAMELS market-risk sensitivity or ''S'' rating for these institutions should be based on assessments of the adequacy of IRR management practices and the quantitative level of IRR exposure.[7] In particular, CAMELS ''S'' ratings dealing primarily with IRR should be based on, but not limited to, an assessment of the following evaluation factors:

- the sensitivity of the financial institution's earnings or the economic value of its capital to adverse changes in interest rates

7. Section A.5020.1, ''Overall Conclusions Regarding Condition of the Bank: Uniform Financial Institutions Rating System,'' provides guidance on the market-risk sensitivity component of the CAMELS rating system.

- the ability of management to identify, measure, monitor, and control exposure to interest-rate risk given the institution's size, complexity, and risk profile
- the nature and complexity of interest-rate risk exposure arising from nontrading positions
- where appropriate, the nature and complexity of market-risk exposure arising from trading and foreign operations

"S" ratings based primarily on IRR should conform with the following framework:

1 A rating of 1 indicates that interest-rate risk sensitivity is well controlled and that there is minimal potential that the earnings performance or capital position will be adversely affected. Risk-management practices are strong for the size, sophistication, and market risk accepted by the institution. The level of earnings and capital provide substantial support for the degree of interest-rate risk taken by the institution.

2 A rating of 2 indicates that interest-rate risk sensitivity is adequately controlled and that there is only moderate potential that the earnings performance or capital position will be adversely affected. Risk-management practices are satisfactory for the size, sophistication, and interest-rate risk accepted by the institution. The level of earnings and capital provide adequate support for the degree of interest-rate risk taken by the institution.

3 A rating of 3 indicates that control of interest-rate risk sensitivity needs improvement or that there is significant potential that the earnings performance or capital position will be adversely affected. Risk-management practices need to be improved given the size, sophistication, and level of risk accepted by the institution. The level of earnings and capital may not adequately support the degree of interest-rate risk taken by the institution.

4 A rating of 4 indicates that control of interest-rate risk sensitivity is unacceptable or that there is high potential that the earnings performance or capital position will be adversely affected. Risk-management practices are deficient for the size, sophistication, and level of risk accepted by the institution. The level of earnings and capital provide inadequate support for the degree of interest-rate risk taken by the institution.

5 A rating of 5 indicates that control of interest-rate risk sensitivity is unacceptable or that the level of risk taken by the institution is an imminent threat to its viability. Risk-management practices are wholly inadequate for the size, sophistication, and level of interest-rate risk accepted by the institution.

The adequacy of an institution's IRR management is a leading indicator of its potential IRR exposure. Therefore, assessment of IRR management practices should be the basis for the overall assessment of an institution's IRR. Unsafe exposures and management weaknesses should be fully reflected in "S" ratings. Unsafe exposures and unsound management practices that are not resolved during the on-site examination should be addressed through subsequent follow-up actions by the examiner and other supervisory personnel.

1. To evaluate the policies regarding interest-rate risk established by the board of directors and/or senior management, including the limits established for the bank's interest-rate risk profile.
2. To determine if the bank's interest-rate risk profile is within those limits.
3. To evaluate the management of the bank's interest-rate risk, including the adequacy of the methods and assumptions used to measure interest-rate risk.
4. To determine if internal management reporting systems provide the information necessary for informed interest-rate management decisions and for monitoring the results of those decisions.
5. To initiate corrective action when interest-rate management policies, practices, and/or procedures are deficient in controlling and monitoring interest-rate risk.

1. Determine if interest rate risk is managed at the bank level or on a holding company basis.
2. Review the bank's written policies for reasonableness. At a minimum, they should cover—
   a. definition and measurement of acceptable risks, including acceptable levels of interest rate exposure;
   b. net interest margin goals;
   c. sources and uses of funds;
   d. off-balance-sheet activities that affect interest rate exposure;
   e. responsibilities within the bank for interest rate risk management decisions; and
   f. reporting mechanisms.
3. Evaluate the internal controls or the internal audit function. Determine whether internal mechanisms are adequate to ensure compliance with established limits on interest rate risk. If they are determined to be inadequate, complete or update the Internal Control Questionnaire. The examiner should prepare a brief description of the bank's interest rate risk policies and practices, as well as identify areas in need of improvement.
4. Review the UBPR, interim financial reports, and internal management reports, paying particular attention to—
   a. on- and off-balance-sheet mix and trends;
   b. the methodology used by the bank to measure interest rate risk; and
   c. the stability of interest margins under varying economic conditions or simulations (causes of significant fluctuations should be identified).
5. Evaluate the bank's exposure to interest rate risk by:
   a. Obtaining and reviewing any reports regularly prepared by management for controlling and monitoring interest rate risk.
   b. Requesting the appropriate information for determining the level of interest rate risk present in the bank's assets, liabilities, and off-balance-sheet activities, if management does not, at a minimum, regularly prepare rate-sensitivity reports (the circumstances facing the bank and the existing interest rate environment should govern the degree of analysis).
   c. Estimating the effect of an adverse interest rate change on future earnings or economic value by using the bank's gap reports, duration measures, or simulation models (the latter measure is especially useful if the bank's exposure seems large).
   d. Determining the bank's ability to adjust its interest rate position.
6. Evaluate the quality of interest rate risk management. The bank's procedures and controls should be in compliance with the minimum guidelines set forth in SR-90-41. The evaluation should include, but is not limited to, the following:
   a. Assess whether the methods and assumptions used to measure interest risk are adequate relative to the size of the bank and the complexity of its balance sheet.
   b. Assess management's knowledge of interest rate risk in relation to the size and complexity of the bank's balance sheet. In particular, assess their understanding of the methods used by the bank to measure the risk.
   c. Determine whether the level of risk is within the limits set.
   d. Assess the bank's ability to adjust its interest rate position.
   e. Determine if the reporting process provides clear and reliable information on a timely basis (at least quarterly).
   f. Determine if new products or hedging instruments are adequately analyzed before purchase.
7. Determine the adequacy of the net interest margin based on an analysis of the components of the margin (i.e., interest expense and interest income). If the margin or any component is unusually high or low, determine—
   a. if goals have been established for net interest earnings;
   b. management's success in meeting established goals;
   c. the effect of the bank's interest rate risk position on meeting established goals;
   d. the effect of the bank's pricing policies on meeting established goals; and
   e. the effect of the bank's credit risk appetite on the margin.

8. Review the interest rate risk management section of the last report of examination. Determine if there were concerns in this area and if corrective action was required.
9. Write in appropriate report format and discuss with management general remarks on—
   a. the quality of the bank's planning to control and manage interest rate risk;
   b. the level of the bank's interest rate exposure and an assessment of the associated degree of risk;
   c. the quality of the related administrative controls and internal management reporting systems; and
   d. the effect of interest rate risk management decisions on earnings and capital.
10. Update the workpapers with any information that will facilitate future examinations.

Discuss with senior management the bank's policies and practices with regard to the following:

1. Has the board of directors, consistent with its duties and responsibilities, adopted an interest rate risk management policy that includes:
   a. A formal mechanism to coordinate interest rate sensitivity decisions?
   b. Clear lines of responsibility and authority for decisions affecting interest rate sensitivity?
   c. Guidelines for the level of interest rate risk, including that associated with off-balance-sheet products, if any?
   d. Outside limits for the imbalance between balance-sheet and off-balance-sheet positions and for the potential exposure of earnings or equity to changes in interest rates?
2. Have internal management reports been prepared that provide an adequate basis for making interest rate management decisions and for monitoring the results of those decisions? Specifically:
   a. Are reports prepared on the bank's rate sensitivity using an appropriate measurement method?
   b. Is historical information on asset yields, cost of funds, and net interest margins readily available?
   c. Are interest margin variations, both from the prior reporting period and from the budget, regularly monitored?
   d. Is sufficient information available to permit an analysis of the cause of interest margin variations?
3. Does the foregoing information provide an adequate basis for evaluating internal controls in that deficiencies in areas not covered by this questionnaire do not significantly impair any controls? Explain negative answers briefly, and indicate any additional examination procedures deemed necessary.

Litigation and Other Legal Matters; Examination-Related Subsequent Events

LITIGATION AND OTHER LEGAL MATTERS

Events or conditions arising from litigation,[1] claims, and assessments are matters within the direct knowledge and, often, control of bank management. Accordingly, management is the primary source of information about these matters.[2] Examiners ordinarily do not possess legal skills and therefore cannot make legal judgments on such information. The examiner should request that bank management send a letter of inquiry to those attorneys with whom it has consulted on litigation, claims, and assessments. The letter of inquiry is the examiner's primary means of corroborating information furnished by management.

When requesting these inquiries, the examiner should consider the scope of counsel's involvement with the bank. Banks frequently engage a number of law firms, so the examiner should have the bank direct requests to both general counsel and counsel whose service is limited to particular matters. Ordinarily, inquiries should be made of all outside counsel.

In certain instances, however, the examiner may be reasonably certain that some of the bank's counsels are handling only routine matters that ultimately won't have a significant effect on the bank's financial condition. In these cases, the examiner-in-charge may decide not to send letters of inquiry to those counsels.

Requests for corroboration from legal counsel should ask for information about litigation, impending litigation, claims, and contingent liabilities. For the purposes of these requests, the terms impending litigation and contingent liabilities have the following meanings:

- *Impending litigation.* Litigation threatened against the bank by a third party but not formally commenced.
- *Contingent liabilities.* Matters other than litigation or claims, which available information indicates have at least a reasonable possibility of impairing assets or increasing liabilities. Contingent liabilities should include unasserted claims or assessments.

A letter of inquiry should ask for a response both as of the examination date and as of the date of counsel's response. That date of response should be as close to the completion of the examination as practicable, yet should allow sufficient time for evaluation of responses and follow-up of nonreplies. In some cases, the examiner may wish to obtain an interim response (in addition to a final response) so that a timely preliminary evaluation of material legal matters may be made. Letters of inquiry should be mailed early enough to allow them to circulate within the law firm because several attorneys may be considering legal matters for the bank. Before completing the examination, the examiner should request that appropriate bank officials contact counsel who have not responded to the initial letter of inquiry.

The examiner should not assume that bank management or counsel will keep him or her informed of developments subsequent to the date of counsel's response. Accordingly, if there is reason to believe that there may be subsequent developments, the examiner should contact bank management again before submitting the report of examination. If bank management is uncooperative or regarded as incapable of supervising matters concerning litigation, or if other sensitivities mandate circumvention of bank management, then the examiner should bring the matter to the attention of Federal Reserve Bank management for further communications with the bank's management and counsel, which could include direct contact with bank counsel.

EXAMINATION-RELATED SUBSEQUENT EVENTS

As a practical matter, the examination, and therefore the report of examination, is as of a

1. Legal or litigation risk is the risk that contracts are not legally enforceable or documented properly. Legal risks should be limited and managed through policies developed by the institution's legal counsel. At a minimum, guidelines and processes should be in place to ensure the enforceability of counterparty agreements.

2. In limited circumstances, a bank director who is not an officer of the bank may have direct knowledge and control of legal information, usually when the director's primary occupation is as an attorney. Management in these rare instances may have limited knowledge and control of legal information.

stated date. However, events or transactions sometimes occur, subsequent to the date of examination, but before the date the report of examination is submitted to the Reserve Bank, that may have a significant effect on the soundness of a bank. Such events and transactions are referred to as ''subsequent events'' and may be of two types.

One type includes those events or transactions that provide additional evidence about conditions that existed at the examination date. Examples of this type are the bankruptcy of a significant borrower or the resolution of outstanding litigation.

The second type includes those events that provide evidence about conditions that did not exist at the date of examination, but that arose subsequently. An example of that type of event would be new litigation arising subsequent to the examination date but before submission of the examination report or a merger agreement signed subsequent to the examination date.

All information that becomes available before the submission of the report of examination should be used by the examiner in his or her evaluations of the bank. Accordingly, all events or transactions that either significantly affect or have the potential to significantly affect the soundness of the bank should be reflected in the report of examination, regardless of whether they occurred before or subsequent to the examination date.

Examination Objectives

Effective date May 1996

1. To determine whether any events or transactions have occurred subsequent to the examination date that have had or may have a significant impact on the present or future soundness of the bank or on the conclusions expressed in the report of examination.
2. To determine the effect of legal counsel's evaluation of litigation, impending litigation, claims, and contingent liabilities on the examiner's overall conclusion regarding the soundness of the bank.

1. Obtain from the bank officer responsible for legal matters a listing of impending or threatened litigation. For each item, the following information should be included:
   - Nature of the litigation.
   - Progress of case to date.
   - How management is responding or intends to respond to the litigation.
   - An evaluation of the likelihood of an unfavorable outcome and an estimate, if one can be made, of the amount or range of potential loss.
2. Obtain from the bank officer responsible for legal matters a listing of unasserted claims or assessments management considers will probably be asserted and which, if asserted, would have at least a reasonable possibility of an unfavorable outcome. For each item, the following information should be included:
   - Nature of the matter.
   - How management intends to respond if the claim is asserted.
   - Possible exposure if the claim is asserted.
3. Obtain, from management, a listing of attorneys and legal firms to whom litigation and related matters have been referred. Also, obtain a listing of any litigation noted in the newest review done by internal/external auditors from the examiner assigned "Internal Control" and determine that corrections have been accomplished.
4. Review bills supporting major charges to the general ledger expenses account(s) for legal services as a test of the completeness of the list supplied by the bank.
5. Request that management incorporate information obtained in above steps in a letter to the bank's legal counsel for corroboration. (A suggested format for such letter can be found in the appendix to this manual.)
6. Evaluate management's listing of litigation, unasserted claims and assessments and counsel's replies for the effect on the financial condition of the bank, giving appropriate consideration to any insurance coverage.
7. Obtain and review copies of any subsequent interim financial statements. Examples of such statements are:
   - Published reports sent to shareholders or others.
   - Reports submitted to the board of directors by internal auditors, external auditors or management.
   - Statements of condition.
   - Income statements.
     — Inquire as to whether interim statements obtained were prepared on the same basis as that used for the statements as of the examination date. If not, request proper adjustments to the interim statements.
     — Compare the interim financial statements, especially income statements, to similar statements for the corresponding period in the prior year and to budgets, profit plans, etc., for the current period, if such are available.
     — Obtain from management satisfactory explanations for any unusual items or significant fluctuations noted.
8. Make inquiries of and hold discussions with officers and other executives who have responsibility for the following matters:
   - Changes in credit lines or transactions with officers, directors, controlling shareholders, affiliated bank holding companies, affiliates of an affiliated holding company or their interests.
   - Changes in significant accounting policies.
   - Changes in senior officers.
   - Any event or combination of events which have had or could have a material adverse effect on the bank's financial condition, including liquidity, or results of operation, such as the default of a bond issue in which the bank has substantial holdings or the filing of bankruptcy by a major borrower.
   - Commencement or discontinuance of services not requiring prior approval.
   - Execution of significant contracts, such as for employment, leases, pension or other fringe benefit programs.
   - Significant new contingent liabilities or commitments other than those referred to above.
   - Significant changes in assets which may

not be evident from the review of subsequent interim financial statements, such as a shift in the amount of loans or investments in special categories, or unusual adjustments made in or after the subsequent interim financial statements reviewed in connection with step 7 above.

9. Distribute information obtained in step 8 to the appropriate examiners.
10. Read minutes of all meetings of stockholders, directors, and appropriate committees (investment, loans, etc.)
    - Ascertain from officials of the bank whether minutes of all such meetings subsequent to the examination date are set forth in the minute book.
    - As to meetings for which minutes have not been prepared at the date of the review, inquire directly of persons present at the meetings and, preferably, of the person charged with the responsibility of preparing the minutes, concerning matters dealt with at such meetings.
11. If specific violations of law or areas of weakness have been reported to management earlier in the examination, determine the extent to which management has proceeded toward corrective action.
12. Make additional inquiries or perform such procedures as considered necessary and appropriate to dispose of questions that arose in the course of the preceding procedures, inquiries and discussions.
13. If, as a result of performing the above procedures, information is obtained that has a significant impact on the evaluation of the soundness of the bank, extend the appropriate examination procedures so that sufficient evidence is reviewed and documented in the workpapers to support the conclusions reached.
14. Prepare comments for the examination report on any events or transaction noted which may have a material effect on the soundness of the bank.
15. Update the workpapers with any information that will facilitate future examinations.

INTRODUCTION

Off-balance-sheet credit activities have been one of the fastest growing areas of banking activity. Although these activities may not be reflected on the balance sheet, they must be thoroughly reviewed because they can expose the bank to contingent liabilities. Contingent liabilities are financial obligations of a bank that are dependent on future events or actions of another party.

The purpose of this section is to provide a concise reference for contingent liabilities that arise from off-balance-sheet credit activities (for example, loan commitments and letters of credit). This section will also include some discussion of other contingent liabilities, which arise from asset sales and other off-balance-sheet activities. Activities such as trusts, securities clearance, securities brokerage, and corporate management advisory services involve significant operational and fiduciary risks and require specialized examination procedures. Consult section 6010, ''Other Types of Examinations,'' in this manual for further information about these activities.

Derivatives are also not covered in this section. The acquisition and management of derivatives for the bank's own account are covered in detail in sections 2020 and 4090, ''Acquisition and Management of Nontrading Securities and Derivative Instruments'' and ''Interest-Rate Risk Management'' of this manual. The *Trading Activities Manual* provides more specific guidance for the examination of banks that are involved in derivatives trading and customer accommodation activities.

Risks associated with contingent liabilities may ultimately result in charges against capital. As a result, full-scope examinations will include an analysis of these risks. Each of the major components of the examination—capital, asset quality, management, liquidity, and earnings—incorporates an assessment of the risks associated with off-balance-sheet credit activities. While it is impossible to enumerate all of the types and characteristics of contingent liabilities here, some of the more common ones are discussed in this section. In all cases, the examiner's overall objectives are to assess the potential impact of these contingent liabilities on the financial condition of the bank, to ascertain the likelihood that such contingencies may ultimately result in losses to the bank, to ensure that management has appropriate systems to identify and control contingent liabilities, and to ensure compliance with all applicable laws, regulations, and statements of regulatory policy.

OFF-BALANCE-SHEET LENDING ACTIVITIES

In reviewing individual credit lines, all of a customer's borrowing arrangements with the bank (for example, direct loans, letters of credit, and loan commitments) should be considered. The factors analyzed in evaluating a direct loan (financial performance, ability and willingness to pay, collateral protection, and future prospects) are applicable to the review of off-balance-sheet lending arrangements. When analyzing these activities, however, examiners should evaluate the probability of draws under the bank's off-balance-sheet lending arrangements with its customers and should evaluate whether the allowance for loan and lease losses adequately reflects the associated risks. Consideration should also be given to compliance with laws and regulations. Refer to section 2040, ''Loan Portfolio Management,'' of this manual for further details.

Loan Commitments

A formal loan commitment is a written agreement signed by the borrower and the lender that details the terms and conditions under which a loan, up to a specified amount, will be made. Unlike a standby letter of credit, which commits the bank to satisfying its customer's obligation to a third party, a loan commitment involves only the bank and its customer. The commitment will have an expiration date and, in exchange for agreeing to make the accommodation, the bank often requires the customer to pay a fee and/or maintain a stipulated compensating balance.

Some commitments, such as a working capital line, revolving credit facility, or a term loan facility, are expected to be used. Other commitments, such as back-up lines of credit for commercial paper issuance, involve usage that is not anticipated unless the customer is unable to retire or roll over the issue at maturity.

Lines of Credit

A line of credit expresses to the customer, usually by letter, a bank's willingness to lend up to a certain amount over a specified timeframe. These lines of credit are disclosed to the customer and are referred to as "advised" or "confirmed" lines. In contrast, "guidance" lines (also referred to as internal guidance lines) are not disclosed to the customer. "Guidance" lines of credit are formally approved like any other loans or commitments and are established to aid the loan officer who is servicing an account act quickly to an unexpected request for funds. Many lines of credit may be cancelled if the customer's financial condition deteriorates; others are simply subject to cancellation at the option of the issuer, such as "guidance" lines and other nonbinding agreements. Lines of credit usually require periodic or annual borrowing cleanups. Not adhering to cleanup provisions is a well-defined weakness.

Disagreements may arise as to what constitutes a legally binding commitment. A bank's own descriptive terminology alone may not always be the best guideline. For example, a credit arrangement could be referred to as a revocable line of credit but, at the same time, it may be a legally binding commitment to lend—especially if consideration has been given by the customer for the bank's promise to lend and if the terms of the agreement between the parties result in a contract. Therefore, management of the bank should properly distinguish its legally binding loan commitments from its revocable loan commitments. Proper documentation will help ensure that the bank's position is defensible if legal action becomes necessary to cancel a loan commitment.

Some lending agreements contain a "material adverse change" (MAC) clause, which is intended to allow the bank to terminate the commitment or line of credit if the customer's financial condition deteriorates. This clause may apply to the continuing financial condition of guarantors. The extent to which MAC clauses are enforceable depends on several factors, including whether a legally binding relationship remains despite specific financial covenants that are violated. Some documents make only a vague reference to a borrower's responsibility for maintaining a satisfactory financial condition. Although the enforceability of MAC clauses may be subject to some uncertainty, such clauses may provide the bank with leverage in negotiations with the customer over such issues as requests for additional collateral and/or personal guarantees.

A bank cannot always routinely determine whether funding of a commitment or line of credit will be required; therefore, the examiner must always subject the line of credit to careful analysis. A MAC clause could allow the bank to refuse funding to a financially troubled borrower; a default in other contract covenants could cause the termination of the commitment or line of credit. Some banks might strictly enforce the terms of a credit arrangement and refuse funding if any of the covenants are broken. Other banks take a more accommodating approach and will continue to make advances unless the customer files for bankruptcy. In the final analysis, the procedures normally followed by the bank in honoring or terminating a contingent lending agreement are important in the examiner's overall evaluation of the credit risk.

Risk Management for Loan Commitments and Lines of Credit

The primary risk inherent in any future extension of credit is that the condition of the borrower may change between the issuing of the commitment and its funding. However, commitments may also entail liquidity and interest-rate risk.

Examiners should evaluate anticipated drawdowns of an issuing bank's loan commitments and lines of credit relative to the bank's anticipated funding sources. A draw under lines of credit may be in the form of a letter of credit issued on the borrower's behalf. Such letters of credit share the same collateral as the line of credit, and the issuance of the letter of credit uses availability under the line. At each examination, the draws that are anticipated for unused commitments and advised lines of credit should be estimated. If the amount of unfunded commitments is large relative to the bank's liquidity position, further analysis is suggested to determine whether borrowed funds will have to be used and, if so, the amount and sources of such funds. Concerns and comments should be noted on the Liquidity/Funds Management page in the report of examination. Also, loan commitments are to be reported on the commitments and contingencies schedule in the report of exami-

nation. For further information, refer to sections 4020, 4090, and 6000, ''Asset/Liability Management,'' ''Interest-Rate Risk Management,'' and ''Instructions for the Report of Examination,'' in this manual.

LETTERS OF CREDIT

A letter of credit substitutes the credit capacity of a financial institution for that of an individual or a corporation. The concept of substituting one obligor's financial standing for another party's financial standing has been used in financing the international shipment of merchandise for centuries (imports and exports). Today, letters of credit are also used in a wide variety of other commercial financing transactions, such as guaranteeing obligations involving the private placement of securities and ensuring payment in the event of nonperformance of an obligated party. In addition, letters of credit are used to secure the guarantees of principals in real estate development loans. For additional information on letters of credit, see section 7080, ''International—Letters of Credit,'' in this manual.

Elements of a Letter of Credit

A letter of credit should contain the following elements:

- a conspicuous statement that the document is a letter of credit
- a specified expiration date or a definite term and an amount
- an obligation of the issuer to pay that is solely dependent on the presentation of conforming documents as specified in the letter of credit and not on the factual performance or nonperformance by the parties to the underlying transaction
- an unqualified obligation of the account party to reimburse the issuer for payments made under the letter of credit

A letter of credit involves at least three parties and is three separate and distinct contracts:

- a contract between the account party and the beneficiary under which the account party has an obligation of payment or performance
- a contract between the account party and the issuer of the letter of credit (The issuer is the party obligated to pay when the terms of the letter of credit are satisfied. The account party agrees to reimburse the issuer for any payments made.)
- a contract between the issuer and the beneficiary, whereby the issuer agrees to pay the beneficiary in compliance with the terms and conditions of the letter

Policies and Procedures

Maintaining adequate written policies and procedures and monitoring letters of credit activities are part of the fiduciary and oversight responsibilities of the board of directors. Generally, policies and procedures governing the institution's issuance of letters of credit are contained in a section of the loan policy manual.

The letter of credit policy should thoroughly explain the institution's procedures in issuing both commercial letters of credit and standby letters of credit. The policy should outline desirable and undesirable issuances, designate persons authorized to issue letters of credit and their corresponding loan authority, and define the recordkeeping and documentation requirements including the need to establish separate files for each issuance.

If several lending departments issue letters of credit, the policy should explicitly assign responsibility for file maintenance and recordkeeping. A separate file containing an exact copy of each outstanding letter of credit and all the supporting documentation that the underwriter used in deciding to issue the letter should be included in the file. This documentation should be the same as the financial documentation used for originating any other form of credit, which includes current financial statements, current income statements, purpose of the letter of credit, collateral-security documentation, proof-of-lien position, borrowing authorization, all correspondence, and officers' memoranda.

Documentation

In addition, the file must contain the documentation associated with any disbursements or payments made. For a commercial letter of credit, these documents may include—

- the draft (sometimes called the bill of exchange), which is the demand for payment;
- the commercial invoice, a document describing the goods being shipped (prepared by the seller and signed by the buyer);
- the bill of lading, which documents that shipment of the goods has taken place and gives the issuer an interest in the goods in the event the account party defaults;
- customs documentation that verifies that all required duties have been paid;
- the insurance certificate, which provides evidence that the seller has procured insurance;
- the consular documents, which state that the shipment of goods satisfies the import/export regulations; and
- the certificates of origin and inspection, which state that the goods originated in a specified country to guard against the substitution of second-quality merchandise.

The documents associated with standby letters of credit are far less complicated than those for commercial letters of credit. Often no document is necessary to support the beneficiary's draw upon a standby letter of credit. This is what is referred to as a clean standby letter of credit and should be discouraged due to the possible legal expense of defending any action taken in honoring or dishonoring a draw without specific documentary requirements. At a minimum, standby letters of credit should require a beneficiary's certificate asserting that the account party has not performed according to the contract or has defaulted on the obligation, as well as a copy of the contract between the account party and beneficiary.

Accounting Issues

Since letters of credit represent a contingent liability to the issuing institution, they must be disclosed in the financial statements in accordance with generally accepted accounting principles (GAAP). The Financial Accounting Standards Board has stipulated in its Statement of Financial Accounting Standard No. 5 that the nature and the amount of a standby letter of credit must be disclosed in the institution's financial statement. Commercial letters of credit and standby letters of credit should be accounted for on the balance sheet as liabilities if it is probable that the bank will disburse funds, and if the amount of the funding is determinable. Most standby letters of credit will not be recorded as a liability. However, their existence will be disclosed in the footnotes to the financial statements.

Benefits of Letters of Credit

Both the customer and the financial institution can benefit from letters of credit. Through the use of a letter of credit, a customer can often obtain a less expensive source of funds than would be possible through direct financing from the institution. For example, the customer may be able to take advantage of a seller's credit terms with the backing of a letter of credit to substantiate the customer's credit capacity. The institution receives a fee for providing the service. In addition, the institution hopes to build a better working relationship with its customers, who may generate or refer other profitable business.

Revocable or Irrevocable

Letters of credit can be issued as either revocable or irrevocable. The revocable letter of credit is rarely used because it may be amended or canceled by the issuer without the consent of the other parties. Most letters of credit are issued as irrevocable with a stipulation that no changes may be made to the original terms without the full consent of all parties.

Risks in Issuing Letters of Credit

A financial institution must be aware of the credit risks that are associated with letters of credit and must issue letters of credit only when its resources are adequate. Although letters of credit are not originally made as loans, they may lead to loans if the account party cannot meet its obligations. Therefore, the institution must implement the same prudent underwriting guidelines for letters of credit as for other extensions of commercial credit. Refer to section 2080, "Commercial Loans," in this manual for further details.

The importance of adequate documentation cannot be overemphasized. Commercial letters of credit are part of a continuous flow of

transactions evolving from letters of credit to sight drafts to acceptances. Repayment may depend on the eventual sale of the goods involved; however, the goods may not provide any collateral protection. Thus, proper handling and accuracy of the required documents are of primary concern. Letters of credit are frequently issued via tested telex, which verifies the authenticity of the sender (usually another bank). No institution should honor a letter of credit presented by a beneficiary without first confirming its authenticity.

Commercial letters of credit involving imports must be considered unsecured until the goods have passed customs, the security documents specified in the letter of credit have been presented, and the goods have been verified and controlled.

Letters of credit are subject to the risk of fraud perpetrated by customers, beneficiaries, or insiders of the issuing institution. Moreover, standby letters of credit can be used by officers or directors as a vehicle for obtaining credit at another institution. It is important to note that Regulation O requirements apply to standby letters of credit.

Consequently, letters of credit should be issued under the same strict internal controls as any other extension of credit. Such controls include a requirement of dual or multilevel authorizations and the segregation of the issuing, recordkeeping, acceptance, and payment functions.

Risks in Honoring Letters of Credit

The honoring of another institution's letter of credit or acceptance requires strict verification procedures as well as dual authorization by the honoring financial institution. Reasons for strict procedures and authorizations are numerous. The issuer may be unable or unwilling to honor a letter of credit or standby letter of credit, claiming that the document is fraudulent or a forgery or that the signer was unauthorized. Before honoring any other institution's letter of credit, a bank should confirm in writing that the letter of credit is valid and will be honored under specified conditions. Agreements with issuers for accepting letters of credit issued by tested telex should provide specific conditions under which they will be honored.

To minimize risks of loss, compliance with the conditions outlined within the letter of credit must be strict—not merely substantial. Testing of LOCs should involve two or more persons through dual authorization or segregation of duties to prevent fraud by employees in this process.

Uniform Commercial Code

Both the issuer and the beneficiary of letters of credit are obligated to conform to a uniform set of rules governed by article 5 of the Uniform Commercial Code (UCC). These rules are referenced in the Uniform Customs and Practice for Documentary Credits (UCP). The UCC is a set of articles governing commercial transactions adopted by various states, whereas the UCP encompasses all of the international guidelines for trading goods and services. Local laws and customs vary and must be followed under advice of counsel.

TYPES OF LETTERS OF CREDIT

There are two major types of letters of credit: the commercial letter of credit, also referred to as a trade letter of credit, and the standby letter of credit. Banks have significantly increased their issuances of letters of credit, particularly standby letters. A contributing factor to this significant increase is that by issuing letters of credit, an institution can increase its earnings without disbursing funds and increasing total assets. The institution charges a fee for the risk of default or nonperformance by the customer, thereby increasing the bank's return on average assets. It is important for examiners to be concerned with the elements of risk that are present in the institution's practices regarding the issuance of letters of credit. Examiners should then assess the institution's system of controls that can mitigate the risks (including staff experience, proper documentation, and the quality of underwriting). The standards for issuing letters of credit should be no less stringent than the standards for making a loan. Likewise, the letter-of-credit portfolio requires a review as thorough as the lending review. A default or nonperformance by the account party of a letter of credit will have the same impact as a default on a loan.

Commercial Letters of Credit

The commercial letter of credit (LOC) is commonly used as a means of financing the sale of goods between a buyer and seller. Generally, a seller will contract with a buyer on an open-account basis, whereby the seller ships the goods to the buyer and submits an invoice. To avoid the risk of nonpayment, the seller may require the buyer to provide a commercial letter of credit. To satisfy the requirement, the buyer applies for a letter of credit at a financial institution. If approved, the letter of credit would contain specified terms and conditions in favor of the seller (beneficiary), and the buyer (account party) would agree to reimburse the financial institution for payments drawn against the letter. The commercial letter of credit can be used to finance one shipment or multiple shipments of goods. Once documents that provide evidence that the goods have been shipped in accordance with the terms of the letter of credit are received, the seller can draw against the issued letter of credit through a documentary draft or a documentary demand for payment. The institution honors the draft, and the buyer incurs an obligation to reimburse the institution.

Letters of credit can be secured by cash deposits, a lien on the shipped goods or other inventory, accounts receivable, or other forms of collateral. Commercial letters of credit ''sold for cash'' (that is, secured by cash deposits) pose very little risk to a bank as long as the bank, before making payment on the draft, ensures that the beneficiary provides the proper documents. If credit is extended to pay for the goods, the subsequent loan presents the same credit risks associated with any other similar loan.

Standby Letters of Credit

The standby letter of credit (SBLOC) is an irrevocable commitment on the part of the issuing institution to make payment to a designated beneficiary if the institution's customer, the account party, defaults on an obligation. The SBLOC differs from the commercial letter of credit because it is not dependent on the movement of goods. While the commercial letter of credit eliminates the beneficiary's risk of nonpayment under the contract of sale, the SBLOC eliminates the financial risks resulting from nonperformance under a contract. The SBLOC, in effect, enhances the credit standing of the bank's customer.

SBLOCs may be financially oriented (financial SBLOCs), whereby an account party agrees to make payment to the beneficiary, or SBLOCs may be service-oriented (performance SBLOCs), whereby the financial institution guarantees to make payment if its customer fails to perform a nonfinancial contractual obligation.

Financial SBLOCs

Financial SBLOCs are often used to back direct financial obligations such as commercial paper, tax-exempt securities, or the margin requirements of exchanges. For example, if the bank's customer issues commercial paper supported by an SBLOC, and the bank's customer is unable to repay the commercial paper at maturity, the holder of the commercial paper may request the bank to make payment. Upon receipt of the request, the bank would repay the holders of the commercial paper and account for the payment as a loan to the customer under the letter of credit. Because of this irrevocable commitment, the bank has, in effect, directly substituted its credit for that of its customer upon the issuance of the SBLOC; consequently, the SBLOC has become a credit enhancement for the customer.

Performance SBLOCs

Performance SBLOCs are generally transaction-specific commitments that the issuer will make payment if the bank's customer fails to perform a nonfinancial contractual obligation, such as to ship a product or provide a service. Performance SBLOCs are often used to guarantee bid or performance bonds. Through a performance SBLOC, the bank provides a guaranty of funds to complete a project if the account party does not perform under the contract. In contrast to the financial SBLOC, the bank's irrevocable commitment provides liquidity to the obligor and not directly to a third-party beneficiary.

Unlike a commercial letter of credit, a demand for payment against an SBLOC is generally an indication that something is wrong. The nonperformance or default that triggers payment under the SBLOC often signals the financial weakness of the customer, whereas payment under a commercial letter of credit suggests that

the account party is conducting its business as usual. Standby letters of credit can be either unsecured or secured by a deposit or other form of collateral.

Uses

The uses of standby letters of credit are practically unlimited. The more common areas of use include the following.

Financing Real Estate Development. A mortgagee will condition its loan commitment upon a cash contribution to a project by the developers. Although the lender insists that the developers have some equity in the project, the developer may not have funds available as they are tied up in other projects. The parties often use the letter of credit to satisfy the requirement for equity without the need for a cash deposit.

Fulfilling Municipal Regulations. Most municipalities require some form of a performance bond to ensure that infrastructure improvements, such as buildings, roads, and utility services, are completed. Because the bonding companies generally required a letter of credit as collateral for their bond, developers began offering the SBLOC to the municipality as a substitute. The SBLOC is probably more common than the performance bond. The SBLOC provides the municipality the guaranty of funds to complete necessary improvements if the developer does not perform as required.

Securing Notes. A lender will sometimes ask its obligor to secure the balance of a promissory note with an SBLOC issued by another bank.

Ensuring Performance. The standby letter of credit is similar to a performance bond. Often the seller of goods will have the borrower obtain a commercial letter of credit to ensure payment; simultaneously, the buyer will have the seller obtain a standby letter of credit to ensure that the goods are delivered when agreed and in acceptable condition.

Guaranteeing Securities. The standby letter of credit guarantees obligations involving the private placement of securities, such as revenue and development bonds. If an SBLOC secures against default, such paper will generally have a higher rating and bear a lower rate of interest. An SBLOC could also be used as a credit enhancer for packaging retail loans for public sale. The use of an SBLOC in this situation typically carries minimal overall risk because the packaging institution normally sets aside a contingent reserve for losses. However, if the reserve is inadequate, the SBLOC should be reviewed for possible classification.

SBLOCs Issued as Surety for Revenue Bonds

SBLOCs may be issued in conjunction with the development of a property that is financed with tax-free or general revenue bonds. In these transactions, a municipal agency—typically, a local housing authority or regional development authority—sells bonds to investors in order to finance the development of a specific project. Once the bonds are issued, the proceeds are placed with a trustee and then loaned at less than market rates to the developer of the project. The below-market-rate loan that is granted to the developer enables the municipal agency to encourage development without expending tax dollars. The municipal agency has no liability; the bond investors only have recourse against the specific project. If the bonds are exempt from federal taxation, they will generally carry a below-market interest rate. If the bonds are not tax free—and some municipal bonds are not tax free—they will carry a market rate of interest.

Because the bonds are secured only by the project, an SBLOC is typically obtained by the beneficiary (in this example, the municipal agency) from a financial institution to provide additional security to the bondholders. The SBLOC is usually for an amount greater than the face amount of the bonds, so the bondholders' accrued interest between interest payment dates is usually secured. The bank generally secures its SBLOC with a lien that is subordinate to the authority's or trustees' lien against the property and the personal guarantees of the principal. Underwriting standards and credit analysis for SBLOCs should mirror those employed for direct loans.

The trustee receives periodic payments from the developer and then pays the bondholders their periodic interest payments and also pays the financial institution its letter-of-credit fee. In the event of a default by the developer, the trustee will draw upon the SBLOC to repay the

bondholders. If such a default occurs, the issuing financial institution assumes the role of the lender for the project.

The structure of the transaction requires the bank issuing the SBLOC to assume virtually all of the risk. Because the purpose of these bonds is to encourage development, financially marginal projects, which would not be feasible under conventional financing, are often financed in this manner. The primary underwriting consideration is the ability of the securing property to service the debt. The debt-service-coverage calculations should include both the tax-free rate, if applicable, obtained through the revenue bonds and market interest rates. The operations of the securing property should also be monitored on an ongoing basis. If new construction is involved, the progress should be monitored and any cost overruns should be identified and addressed.

Renewal of SBLOCs

Although most SBLOCs contain periodic renewal features, the examiner must be aware that the bank cannot relieve itself from liability simply by choosing not to renew the SBLOC. Virtually all of the bond issues require a notice of nonrenewal before the expiration of the SBLOC. If such notice is received by the trustee, the trustee normally considers the notice an event of default and draws against the existing SBLOC. The bank should protect itself, therefore, by continuously monitoring both the project and the status of the bonds. Documentation should be maintained in the bank's file to substantiate the property's occupancy, its cashflow position, and the status of the bonds. In addition to the current status of interest payments, any requirements for a sinking fund that are contained in the bond indenture should also be monitored.

Some letters of credit are automatically renewable unless the issuing bank gives the beneficiary prior notice (usually 30 days). These letters of credit represent some additional risk because of the notification requirement placed on the bank. As noted above, proper monitoring and timely follow-up are imperative to minimize risk.

Without the benefit of a substantial guarantor or equity in the collateral, these SBLOCs present more than normal risk of loss. If the SBLOC is converted into an extension of credit, the loan will likely be classified substandard or worse. Protection against loss may be provided by a long-term lease from a major tenant of an industrial property or a lease from a housing authority with a governmental funding commitment or guaranty.

Classification of SBLOCs

It may be appropriate to adversely classify an SBLOC if draws under the SBLOC are probable and a well-defined credit weakness exists. For example, deterioration of the financial standing of the account party could jeopardize performance under the letter of credit and result in the requirement of payment to the beneficiary. Such a payment would result in a loan to the account party and could result in a collection problem, especially if the SBLOC was unsecured. If payment is probable and the account party does not have the ability to repay the institution, an adverse classification is warranted. FASB 5 requires that if a loss contingency is probable and can be reasonably estimated, a charge to income must be accrued. Refer to section 2060, ''Classification of Credits,'' in this manual for procedures on SBLOC classification.

BANKER'S ACCEPTANCES

When the beneficiary presents a draft to the issuer in compliance with the terms of a commercial letter of credit, the method of honoring the draft is acceptance. The issuer will stamp the word ''accepted'' across the face of the draft, which makes the instrument negotiable. Thus, the institution upon which the draft is drawn converts what was originally an order to pay into an unconditional promise to pay. Depending on the terms specified in the letter of credit, payment of the draft can vary from sight to 180 days. There is a ready market for these instruments, because payment must be made at maturity by the accepting institution, whether or not it is reimbursed by its customer. These acceptances are readily negotiable, and a beneficiary may sell accepted time drafts to other financial institutions at a discount. Acceptances are governed by article 3 of the UCC, and any rights the parties have under acceptance are subject to the rules of that article. For further discussion of banker's acceptances, see section 7060, ''International—Banker's Accep-

tances,'' and the Instructions for the Preparation of the Report of Condition and Income.

Participations in Banker's Acceptances

The following discussion refers to the roles of accepting and endorsing banks in banker's acceptances. It does not apply to banks purchasing other banks' acceptances for investment purposes. Banker's acceptances may represent either a direct or contingent liability of the bank. If the acceptance is created by the bank, it constitutes a direct liability that must be paid on a specified future date. The acceptance is also an on-balance-sheet, recognized liability. If a bank participates in the funding risk of an acceptance created by another bank, the liability is contingent and the item is carried off-balance-sheet. The financial strength and repayment ability of the accepting bank should be considered in analyzing the amount of risk associated with these contingent liabilities.

Participations in acceptances conveyed to others by the accepting bank include transactions that provide for the other party to the participation to pay the amount of its participated share to the accepting bank at the maturity of the acceptance, whether or not the account party defaults. Participations in acceptances acquired by the nonaccepting bank include transactions that provide for the nonaccepting bank to pay the amount of its participated share to the accepting bank at the maturity of the acceptance, whether or not the account party defaults.

Call Report Treatment

For regulatory reporting purposes, the existence of such participations is not to be recorded on the balance sheet. Rather, both the accepting bank conveying the participation to others and the bank acquiring the participation from the accepting bank must report the amounts of such participations in the appropriate item in Schedule RC-L, Commitments and Contingencies. (The amount of participations in acceptances reported in Schedule RC-L by a member bank may differ from the amount of such participations that enter into the calculation of the bank's acceptances to be counted toward its acceptance limit imposed by section 13 of the Federal Reserve Act (12 USC 372). These differences are mainly attributable to participations in ineligible acceptances, to participations with ''uncovered'' institutions, and to participations that do not conform to the minimum requirements set forth in 12 CFR 250.163.)

NOTE-ISSUANCE AND REVOLVING UNDERWRITING CREDIT FACILITIES

The first note-issuance facility (NIF) was introduced in 1981. A NIF is a medium-term (five- to seven-year) arrangement under which a borrower can issue short-term paper. The paper is issued on a revolving basis, with maturities ranging from as low as seven days to up to one year. Underwriters are committed either to purchasing any unsold notes or to providing standby credit. Bank borrowing usually involves commercial paper consisting of short-term certificates of deposit and, for nonbank borrowers, generally promissory notes (Euronotes). Although NIF is the most common term used for this type of arrangement, other terms include the revolving underwriting facility (RUF) and the standby note-issuance facility (SNIF).

Another type of facility, a RUF, was introduced in 1982. A RUF is a medium-term revolving commitment to guarantee the overseas sale of short-term negotiable promissory notes (usually a fixed-spread over LIBOR) issued by the borrower at or below a predetermined interest rate. RUFs separate the roles of the medium-term risk-taker from the funding institutions (the short-term investors). RUFs and NIFs allow access to capital sources at interest rates considerably below conventional financing rates. The savings in interest cost are derived because the borrower obtains the lower interest costs prevailing in the short-term markets, while still retaining the security of longer term financing commitments. The notes issued under RUFs are attractive for institutional investors since they permit greater diversification of risk than the certificates of deposit of only one bank. Underwriters favor them because their commitments do not appear on the statement of financial condition. RUFs are usually structured for periods of four to seven years.

A RUF differs from a NIF in that it separates the functions of underwriting and distribution. With a RUF, the lead bank (manager or arranger)

acts as the only placing agent. The arranger retains total control over the placing of the notes.

NIFs and RUFs are discussed further in the *Bank Holding Company Supervision Manual*.

GUARANTEES ISSUED

State member banks and foreign branches of U.S. banks are allowed to issue guarantees or sureties under certain circumstances. Such guarantees are to be reported as contingent liabilities in Schedule RC-L. Refer to section 7090, ''International—Guarantees Issued,'' of this manual and to the call report instructions for further information.

ASSET SALES

The term ''asset sales,'' in the following context, encompasses the range of activities from the sale of whole loans to the sale of securities representing interests in pools of loans. Asset-sales programs entail establishing both a portfolio of assets that are structured to be easily salable and a distribution network to sell the assets. Most large banks have expended great effort in developing structures and standard procedures to streamline asset-sale transactions and continue to do so.

Asset sales, if done properly, can have a legitimate role in a bank's overall asset and liability management, and can contribute to the efficient functioning of the financial system. In addition, these activities can assist a bank in diversifying its risks and improving its liquidity.

The benefits of a qualifying sale transaction are numerous. In particular, the sale of a loan reduces capital requirements. The treatment also enhances net income, assuming that the loan was sold for a profit.

Banks' involvement in commercial loan sales and in public issuance of mortgage and asset-backed securities has grown tremendously over the last decade. Banks are important both as buyers and sellers of whole loans, loan participations, and asset-backed securities. Banks also play important roles in servicing consumer receivables and mortgages backing securities and in providing credit enhancement to originators of primarily asset-backed securities.

Both whole loans and portions of loans are sold. Banks sell portions of loans through participation arrangements and syndication agreements.

Participations

A loan participation is a sharing or selling of ownership interests in a loan between two or more financial institutions. Normally, a lead bank originates the loan and sells ownership interests to one or more participating banks at the time the loan is closed. The lead bank (originating bank) normally retains a partial interest in the loan, holds all loan documentation in its own name, services the loan, and deals directly with the customer for the benefit of all participants. Properly structured, loan participations allow selling banks to accommodate large loan requests that would otherwise exceed lending limits, to diversify risk, and to improve liquidity by obtaining additional loanable funds. Participating banks are able to compensate for low local demand for loans or invest in large loans without their servicing burdens and origination costs. If not appropriately structured and documented, however, a loan participation can present unwarranted risks to both the seller and purchaser of the loan. Examiners should determine the nature and adequacy of the participation arrangement and should analyze the credit quality of the loan. For further information on participations, refer to section 2040, ''Loan Portfolio Management,'' in this manual.

Syndication

A syndication is an arrangement in which two or more banks lend directly to the same borrower pursuant to one loan agreement. Each bank in the syndicate is a party to the loan agreement and receives a note from the borrower evidencing the borrower's debt to that bank. Each participant in the syndicate, including the lead bank, records its own share of the participated loan. Consequently, the recourse issues and contingent liabilities encountered in a loan participation involving syndication are not normally an issue. However, many banks involved in syndicated transactions will sell some of their allotment of the facility through subparticipations. These subparticipations should

be reviewed in the same manner as any other participation arrangement.

Asset Securitization

Banks have long been involved with asset-backed securities, both as investors in these securities and as sellers of assets within the context of the securitization process. In recent years, banks have increased their participation in the long-established market for those securities that are backed by residential mortgage loans. They have also expanded their securitizing activities to other types of assets, including credit card receivables, automobile loans, boat loans, commercial real estate loans, student loans, nonperforming loans, and lease receivables. See section 4030, ''Asset Securitization,'' for a detailed discussion of the securitization process.

Risks

Assets sold without recourse are generally not a contingent liability, and the bank should reflect on its books only that portion of the assets it has retained. In some instances, however, participations must be repurchased to facilitate ultimate collection. For example, a bank may sell the portion of a loan that is guaranteed by the Small Business Administration (SBA) and retain the unguaranteed portion and the responsibility for servicing the loan. In the event of a default, the holder of the guaranteed portion has the option to request the originating bank to repurchase its portion before presenting the loan to the SBA for ultimate disposition and collection. In addition, some banks may repurchase assets and absorb any loss even when no legal responsibility exists. It is necessary to determine management's practice in order to evaluate the degree of risk involved. If management routinely repurchases assets that were sold without recourse, a contingency liability should be recognized. The amount of the liability should be based on historical data.

Contingent liabilities may also result if the bank, as the seller of a loan without recourse, does not comply with provisions of the agreement. Noncompliance may result from a number of factors, including failure on the part of the selling institution to receive collateral and/or security agreements, obtain required guarantees, or notify the purchasing party of default or adverse financial performance by the borrower. The purchaser of a loan may also assert claims that the financial information, which the purchaser relied on when acquiring the loan, was inaccurate, misleading, or fraudulent and that the selling bank was aware of the deficiencies. Therefore, a certain degree of risk may in fact be evident in assets allegedly sold without recourse. Examiners need to be mindful of this possibility and its possible financial consequences on the bank under examination.

Banks also face credit, liquidity, and interest-rate risk in the period in which they accumulate the assets for sale. Especially in mortgage banking activities, the need to carefully monitor interest-rate risk in the ''pipeline'' represents one of the significant risks of the business. Sellers of participations also face counterparty risk similar to that of a funding desk, because the loan-sales operation depends on the ongoing willingness of purchasers to roll over existing participations and to buy new ones. In addition, many banks sell loans in the secondary market but retain the responsibility for servicing the loans.

Accounting Issues

For regulatory reporting purposes, some transactions involving the ''sale'' of assets must be reported as financing transactions (that is, as borrowings secured by the assets ''sold''), and others must be reported as sales of the assets involved. The treatment required for any particular transfer of assets depends on whether the ''seller'' retains risk in connection with the transfer of the assets. In general, to report the transfer of assets as a sale, the selling institution must retain no risk of loss or obligation for payment of principal or interest.

All recourse arrangements should be documented in writing. If a loan is sold with recourse back to the seller, the selling bank has, in effect, retained the full credit risk of the loan, and its lending limit to the borrower is not reduced by the amount sold. Loans sold with recourse are to be treated as borrowings of the selling bank from the purchasing bank. Examiners should consider asset sales subject to formal or informal repurchase agreements (or understandings)

to be sales "with recourse" regardless of other wording in the agreement to the contrary.

In determining the true recourse nature of an asset sale, examiners must determine the extent to which the credit risk has been transferred from the seller to the purchaser. In general, if the risk of loss or obligation for payments of principal or interest is retained by, or may ultimately fall back upon, the seller or lead bank, the transaction must be reported by the seller as a borrowing from the purchaser and by the purchaser as a loan to the seller. Complete details on the treatment of asset sales for purposes of the report of condition and income are found in the glossary of the Instructions for the Preparation of the Report of Condition and Income under the entry "sales of assets."

OTHER OFF-BALANCE-SHEET ACTIVITIES AND CONTINGENT LIABILITIES

Banks often provide a large number of customer services, which normally do not result in transactions subject to entry on the general ledger. These customer services include safekeeping, the rental of safe deposit boxes, the purchase and sale of investments for customers, the sale of traveler's checks, the sale of U.S. Savings Bonds, collection services, federal funds sold as agent, operating leases, and correspondent bank services. It is the bank's responsibility to ensure that collateral and other nonledger items are properly recorded and protected by effective custodial controls. Proper insurance must also be obtained to protect against claims arising from mishandling, negligence, mysterious disappearance, or other unforeseen occurrences. Failure to take these protective steps may lead to contingent liabilities. In addition, pending litigation in which the bank is a defendant could expose the bank to substantial risk of loss. Refer to section 4000, "Other Examination Areas," in this manual for further information.

Banks often enter into operating leases as lessees of buildings and equipment. The arrangements should be governed by a written lease. For a material lease, the examiner must determine whether the lease is truly an operating lease or if it is a capitalized lease pursuant to FASB 13. Capitalized leases and associated obligations must be recorded on the books of the bank in accordance with FASB 13 and the instructions for the preparation of the Report of Condition and Income. Refer to the instructions for the call report and to section 2190, "Bank Premises and Equipment," in this manual for further information about capitalized leases.

While operating leases do not affect the bank's capital ratios, the costs of an operating lease may have a material effect upon the earnings of the bank. Moreover, operating leases may involve other responsibilities for the bank, and the bank's failure to perform these responsibilities may ultimately result in litigation and loss to the bank. The examiner must be cognizant of the requirements imposed on the bank by its leasing arrangements.

Some banks purchase federal funds from smaller correspondent banks as agent. This off-balance-sheet activity is more fully discussed in section 2030, "Bank Dealer Activities," in this manual.

Contingent Claims from Off-Balance-Sheet Credit Activities
Examination Objectives
Effective date November 1995

Section 4110.2

1. To determine if policies, practices, procedures, and internal controls regarding contingent claims from off-balance-sheet credit activities are adequate.
2. To determine if bank officers are operating in conformance with the established guidelines.
3. To evaluate the off-balance-sheet credit activities for credit quality and collectibility.
4. To determine the scope and adequacy of the audit function.
5. To determine compliance with applicable laws and
6. To initiate corrective action when policies, practices, procedures, or internal controls are deficient or when violations of laws or regulations have been noted.